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ABSTRACT

This is the final report on the assistance to agricultural research, education, and extension organization given by The Ohio State University (OSU) to the development of the University of Udaipur in the State of Rajasthan, India. The preliminary program of 1955-1964 consisted of assigning OSU faculty members to India, providing professional training on the OSU campus in agriculture or veterinary medicine for personnel from Indian colleges and government, and furnishing needed library materials and laboratory equipment to India. The second program from November 1964 through September 1972 was specifically to help develop the Rajasthan state university along the pattern of the land-grant institutions in the United States through appropriate Rajasthan statutes and financing, adequate physical plant and staffing, and effective integration of teaching, research, and extension programs relevant to the needs of agriculture in the state. Details of the programs and of the development of the University of Udaipur are presented along with evaluation of accomplishments and recommendations for improvement. (MF)

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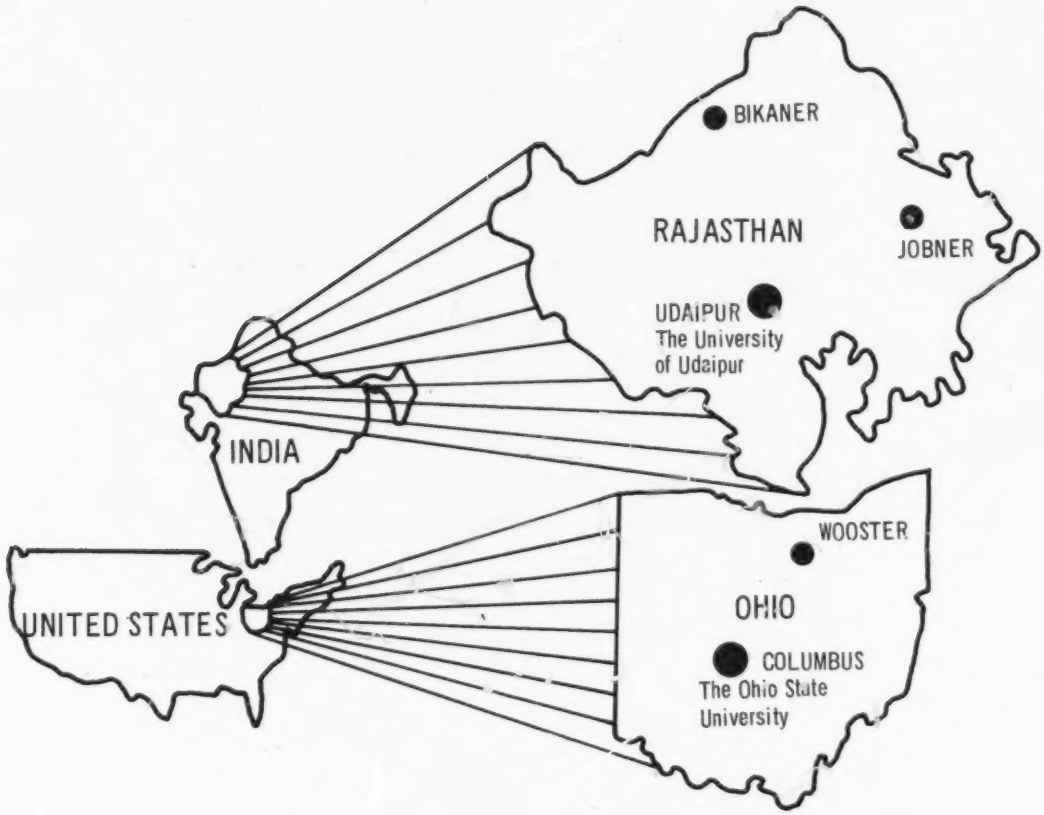
INTERNATIONAL AGRICULTURAL AFFAIRS

The College of Agriculture and Home Economics
THE OHIO STATE UNIVERSITY
Cooperating with
THE UNIVERSITY OF UDAIPUR



TERMINAL REPORT

RESEARCH AND EDUCATION PROGRAMS

1955-1964 and 1964-1972

UT 020722

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TERMINAL REPORT

USAID Contract/Nesa-148

November 1, 1964 - September 30, 1972

Program of

THE OHIO STATE UNIVERSITY, COLUMBUS, OHIO, U.S.A.

and the

UNIVERSITY OF UDAIPUR

Campuses at Udaipur, Jobner, and Bikaner

Rajasthan, India

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FOREWORD

This is the final and terminal report on The Ohio State University program with the University of Udaipur, Rajasthan, India. This report is presented in compliance with the USAID nesa 148 Contract between the Agency for International Development, The United States of America, and The Ohio State University.

This report covers mainly the period of the AID contract from Nov. 1, 1964 to September 30, 1972. However, the report also covers the preliminary Ohio State University Program from 1955 to 1964 for the Northwest region of India which included the State of Rajasthan.

Annual reports were made on the program as follows:

Nov. 1, 1964 - Oct. 31, 1965
Nov. 1, 1965 - Oct. 31, 1966
Nov. 1, 1966 - June 30, 1967
July 1, 1967 - June 30, 1968
July 1, 1968 - June 30, 1969
July 1, 1969 - June 30, 1970
July 1, 1970 - June 30, 1971
July 1, 1971 - June 30, 1972

Semi-annual reports were made on the Preliminary Program from 1955 to 1964. Individual OSU Professors stationed in India at times made monthly and quarterly reports and all of them made terminal reports to the USAID Mission in Delhi, India.

The annual reports for the last four years were quite comprehensive and presented more details on the program, the University of Udaipur, the State of Rajasthan and evaluation of the program.

In this report it seemed best to use two approaches in evaluating the program: (1) the contributions made toward the development of separate phases or subject matter areas of the University of Udaipur, and (2) the contribution toward the organization, structure, administration, and development of the overall University. Of course the development of each phase or subject matter area probably helped develop the total University, but often it is difficult to determine specifically this relationship. The evaluation would not be as thorough if only one approach had been taken.

This program was terminated about four years earlier than had been expected. The University of Udaipur is in a crucial stage of development. Decisions that will be made in the next few years are likely to determine whether the University becomes a people's land-grant type University serving the State of Rajasthan, or it regresses into the old traditional type of institution. A number of areas in the University still need to

be improved. An international relationship or linkage with a U. S. University would continue to be most helpful. The benefits of this program to the University of Udaipur have been significant.

In this report no attempt has been made to quantify the direct costs and benefits of this program to The Ohio State University. Without doubt there were unreimbursed costs to The Ohio State University by way of disruptions of faculty teaching, research and extension programs. On the other hand many benefits were received, mainly in enlarging the international dimension of the College of Agriculture and Home Economics and some other areas of OSU in respect to the quality of teaching, developmental research, study abroad opportunities, professional breadth of faculty, and world wide understanding. The Ohio State University is better for having conducted this program and the United States was served in its technical assistance program with India.

This program was a multi-party adventure and indications are that all parties benefitted: The University of Udaipur, The Ohio State University, The Government of India, and The United States Government. It has offered an opportunity to build sound bridges and valuable linkages between the two governments and between the two universities.

I. BACKGROUND

Shortly after India became an independent nation in 1947 her University Education Commission recommended the establishment of rural universities which would have many of the attributes of U. S Land-Grant Universities. Somewhat later, a project for U. S. assistance to agricultural research, education and extension organization in India was proposed between the Government of India and the Government of the United States. This project called Operational Agreement No. 28 was signed by representatives of the two governments on April 30, 1954.

As one major phase of the project a Joint Team, consisting of five representatives of the Indian government and three specialists in agricultural education and research from the United States, was selected to:

> "Make a comparative study of the organization, functions and working of Indian and American agricultural and research institutions and agricultural colleges and make recommendations, including in particular, as to how the assistance envisaged under various TCM (Technical Cooperation Mission) agreements could be utilized to maximum advantage to remove some of the critical deficiencies in the existing facilities for agricultural research and education in India."

It was also to:

> "Suggest methods for coordinating the work of such institutions in India functioning under the Center, the States and the Universities."

The report of the Joint Indo-American Team, as well as the report of the University Education Commission, mentioned above, served as the basis for the development of the inter-institutional program.

In 1955 the Government of India and the U. S. TCM (United States Technical Cooperation Mission in India) arranged for five Land-Grant Universities (Ohio State University, University of Illinois, Kansas State University, University of Tennessee and the University of Missouri) to assist 40 Indian colleges of agriculture and veterinary science and two research institutes. Each of these U. S. Universities was to work with all the colleges and related institutions in a region of two to four states or territories. For this purpose India was divided into five regions with the responsibilities of the five land-grant universities divided as follows:

U.S. LAND-GRANT UNIVERSITIES	REGION	STATES OR TERRITORIES
University of Illinois	I	Uttar Pradesh, Madhya Pradesh
The Ohio State University	II	Punjab, Rajasthan, Pepsu, Himachel Pradesh

University of Missouri	III	Bengal, Orissa, Bihar, Assam
Kansas State University	IV	Maharashtra, Andhra Pradesh
University of Tennessee	V	Mysore, Madras, Kerala

A map of India on which these regions are delineated is presented below. Later in 1966 Pennsylvania State University joined the program in the State of Maharashtra, sharing region IV with Kansas State University.

II. THE OHIO STATE UNIVERSITY PRELIMINARY PROGRAM 1955--1964

The Ohio State University entered into a contract (TCA-W-18) with the United States International Cooperation Administration, September 12, 1955 to assist in the development of education, research and extension in agriculture in Northwestern India, including the states of Rajasthan, Pepsu, Punjab, and Himachel Pradesh. The program was conducted under this contract to 1958, and then was continued by a new contract ICA-W-630 effective May 21, 1958. More specifically, the original contract stated that The Ohio State University was "to render such advice and assistance to the Ministry (of Food and Agriculture) as may be appropriate to effectuate the general purpose of strengthening the Indian agricultural institutions engaged in education, research and extension in performing their key roles in India's agricultural development and such other purposes....by carrying out....projects and activities in the fields of agriculture, animal husbandry, veterinary science and home economics...."

This program had been recommended to the administration of The Ohio State University by Dean Leo L. Rummell and Associate Dean T. S. Sutton of the College of Agriculture after they had made a preliminary visit to India in April and May of 1955 at the request of the U. S. Technical Cooperation Mission in India. They visited and counselled with the national and state leaders of Agriculture in India and saw the principal facilities for research and education in order to determine the advisability of OSU engaging in such a program and to observe the needs of the area which would provide the guidelines for the development of a cooperative program.

The program developed by The Ohio State University consisted of three parts: (1) assigning individual OSU faculty members to India for periods of a few weeks to two or more years, (2) programming, supervising and financing both advanced academic and special training of individuals from India at OSU and other U. S. institutions in accordance with the needs of the developing Indian institutions, and (3) purchasing in U. S. and shipping to India of library materials, laboratory equipment, and other materials not available in India, but needed for the development of agricultural education and research in India. In addition the U. S. Technical Cooperation Mission (later the USAID Mission) in India provided important services of backstopping the program and, along with the Government of India, provided complementary financial support.

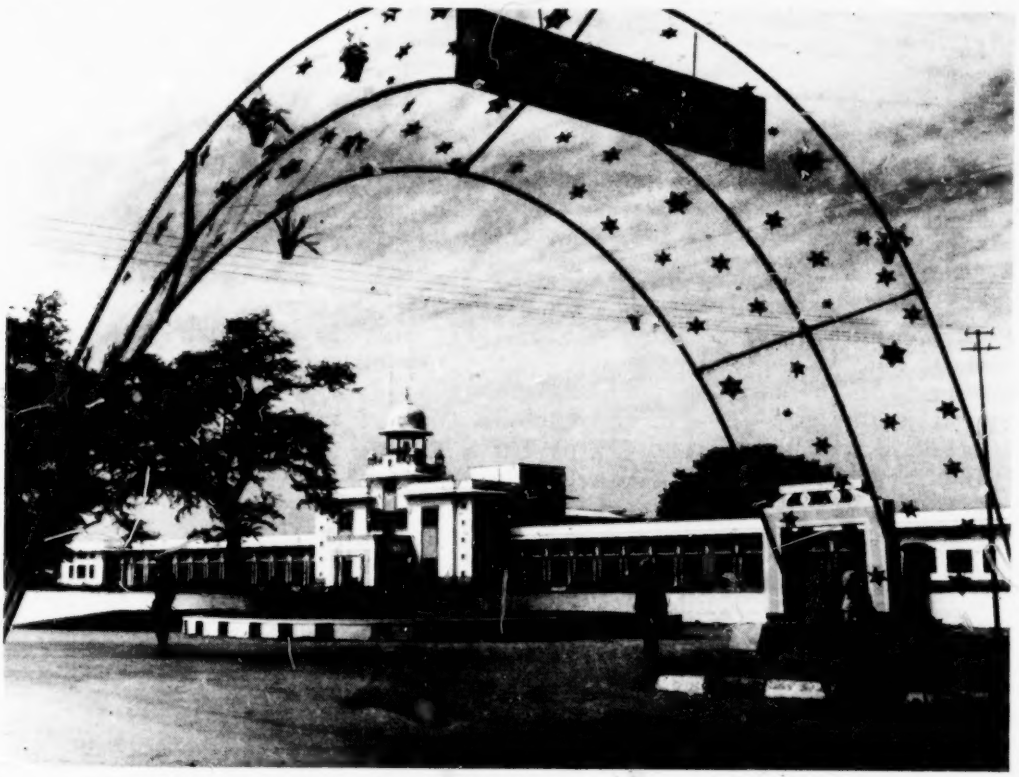
A. OSU FACULTY ASSIGNED TO RAJASTHAN, INDIA

OSU faculty arrived in India on October 6, 1955, and were stationed at various places in the Northwestern Region. The Group Leader, T. S. Sutton, was stationed at Ludhiana, in the State of Punjab, and took leadership in the entire region. Charles L. Blackman, Dairy Production

Specialist, was the first to be located in the State of Rajasthan. He was posted at the College of Veterinary Science and Animal Husbandry in Bikaner, in the Western part of Rajasthan. This college was established August 16, 1954, only one year before the contract.

About six months later, in the spring of 1956, Professor Blackman was transferred to the Rajasthan College of Agriculture at Udaipur in the southern part of Rajasthan. This college had just opened August 1, 1955, and was operating in an old high school building and had about three acres of land. J. D. Grossman, OSU Veterinarian, then replaced Professor Blackman at Bikaner. The oldest agricultural educational institution in the State of Rajasthan was the S.K.N. Agricultural Institute at Jobner, near Jaipur, capital of the State. However, this Institute had inadequate facilities and staff, and at that time was no longer approved for awarding the degree of B. Sc. in agriculture.

Besides working at Bikaner and Udaipur, discussions were held from time to time with the state government officials, particularly the Ministry of Agriculture and the Development Commissioner in the State. These state officials can be quite influential in supporting the development of the educational and research institutions in agriculture. The OSU Group Leader made most of the contacts with these officials. Less could be done in Rajasthan than in the Punjab because the group leader was stationed in the Punjab, and only occasionally traveled to Rajasthan. This less frequent contact with the officials could have been a factor in the slower development of a land grant type of University in Rajasthan than in the Punjab.



The College of Agriculture Building at Udaipur,
originally started as the Rajasthan College of Agriculture.

During the period from 1955 to 1964 The Ohio State University assigned 15 faculty members to work in the State of Rajasthan (Table 1): one was stationed for 6 months at Bikaner and then about 16 months at Udaipur; two were stationed at Bikaner the total time, at the College of Veterinary Medicine and Animal Husbandry; 8 were stationed at Udaipur their total time at the Rajasthan Agricultural College, and the remaining 4 were group leaders who were headquartered in the State of Punjab.

Besides the Group Leaders, the 11 OSU faculty members were specialists in dairy production, veterinary anatomy, veterinary surgery, dairy engineering, agricultural engineering, soils, agricultural extension, farm management, poultry science, student registration and university administration, and home science.

The Group Leader was the OSU administrative officer in India. He was in close communication with the government and other agricultural leaders of the State and he took leadership in evolving the future program. He consulted frequently with the US/TCM or AID Mission personnel in India. The group leaders from the 5 U. S. Universities met together occasionally where they had opportunity to exchange ideas about the development of the programs in their respective regions.

B. OSU ADMINISTRATIVE AND FACULTY SUPPORT

A vital and important part of the program was the contribution and cooperative support of the total program by the administration and faculty on the OSU campus at Columbus, Ohio.

The President of The Ohio State University and the Dean of the College of Agriculture and Home Economics were the senior administrators for the program (Table 2A). They made decisions of policy in regard to the management of the program by The Ohio State University. The final decision rested with these top administrators as to the assignment of faculty to India with concurrence of the Indian institution and Government and of TCA or AID. This needed to be done very carefully to provide the best faculty person for the job in India and still not disrupt and weaken the on-going operations of The Ohio State University as well as the Ohio Research Program and the Extension Service.

In addition to the President of OSU and the Dean of the College of Agriculture and Home Economics, (the Dean is also Director of the Ohio Agricultural Research and Development Center and Director of the Ohio Cooperative Extension Service), the Associate Deans of the College, Natural Resources, and Home Economics; the Associate Director of the Ohio Research and Development Center and the Associate Director of the Ohio Cooperative Extension Service were involved in the administration of the program. Some of these administrators made trips to India to observe, consult and advise on the program.

A campus coordinator was assigned to the program from the beginning and he played an important role, backstopping and managing the various parts of the program which needed to be done on the OSU campus (Table 2B). His work was vital to all three parts of the program. For the OSU faculty

assigned to India, he communicated with the administration, particularly the Dean and the Chairmen of departments of OSU as to the professional and personal requirements of the faculty person to be considered. He then helped to orient and prepare the OSU faculty person and his family to go to India, helped them to get there and return, maintained close communication with the group leader and others, and provided backstopping for the field staff in India.

For the Indian individuals to come to U. S. for training, he provided the programming, the management, and financial support for each individual while they were in the United States. He was instrumental in purchasing and shipping to India the special equipment and library materials. He made a number of visits to India to keep abreast of the situation there and to consult on the development of the entire program.

Many of the faculty and administrators of The Ohio State University on the campus at Columbus made contributions to the program by making executive trips to India (Table 3), adivsing and helping with the training in the United States and generally consulting on various aspects of the program.

The Campus Coordinators of the five U. S. universities and other administrative officials, along with representatives from TCA or AID Washington, and sometimes from TCM or AID in India, met annually on one of the U. S. campuses. This afforded excellent opportunity to share ideas for improvement of programs, to work jointly on solutions to common problems, and to cooperate in every possible way.

C. U. S. TRAINING FOR INDIVIDUALS FROM RAJASTHAN

During three years, 1952-55, prior to the OSU contract, the U. S. Technical Cooperation Mission provided special training in the U. S. for five individuals from Rajasthan (Table 4). Then in 1957, as part of the OSU contract, the first two individuals, one from Bikaner and one from Udaipur, were brought to the U. S. to start their training for M.S. degrees. This U. S. training of individuals from Rajasthan continued through 1964 on the OSU regional contract. The training was mostly for short terms, 4 to 12 months, in which case part of the individuals completed an M. S. degree. A total of 61 individuals were brought to the U. S. for training from Rajasthan under the regional contract from 1955 to 1964, but 10 of these completed their training after 1964 on the new OSU/AID contract. Most of the individuals were from the State Government of Rajasthan and the Colleges at Bikaner and at Udaipur. The training was in each individual's professional field of agriculture or veterinary medicine.

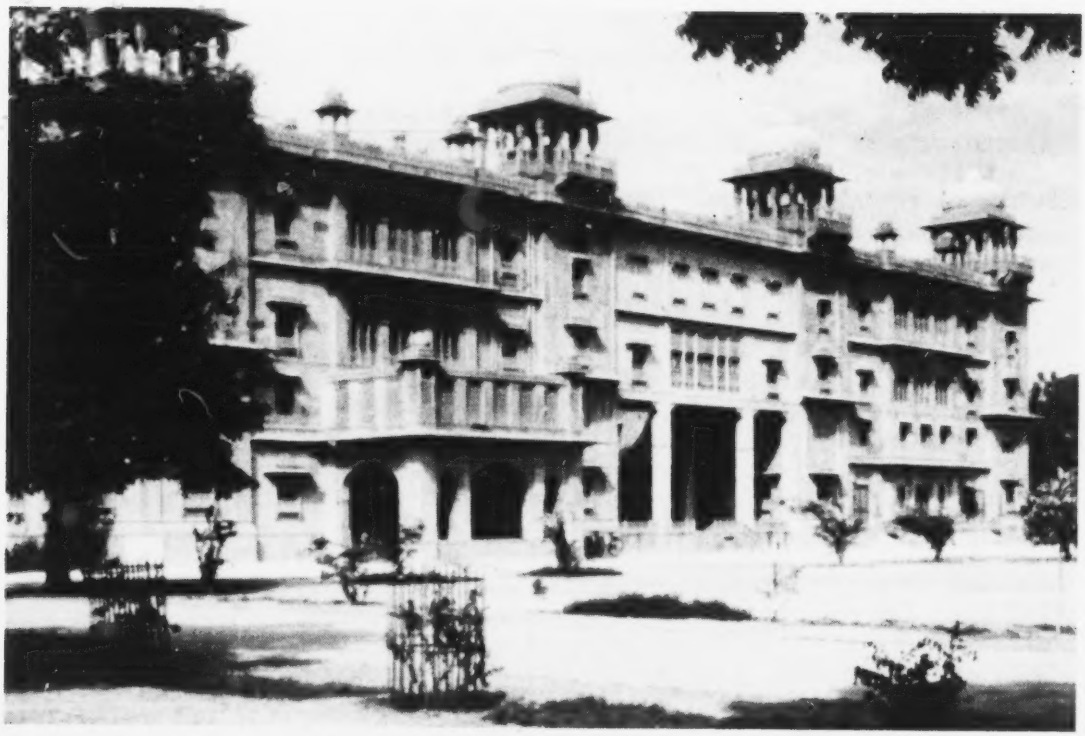
Most of the individuals provided training in the U. S. prior to 1965 are presently employed by the University of Udaipur or by the Rajasthan State Government, and many are assuming positions of leadership.

At the time the University of Udaipur was being organized, it was considered important for some of the Indian administrators of the university to visit the U. S. and particularly The Ohio State University, in

order to become acquainted with the U. S. land-grant type institution. While the Indian institutions could not be exactly like the U. S. institutions, the general principles and philosophy, with regard to the institution and its functions, would be about the same. The head of the various colleges, that were joined together to form the new Indian university, were brought to the U. S. to visit the Ohio State University in 1963 (Table 5).

D. LIBRARY MATERIALS, EQUIPMENT, AND SUPPLIES PROVIDED

The first library books from the U. S. purchased and shipped by OSU to Rajasthan on the regional contract arrived the first part of 1957 for the Colleges at Bikaner and Udaipur. Many more shipments of books and equipment arrived from OSU at these two institutions through 1964 under the regional contract. A considerable number of books were donated by OSU to the Indian Colleges.



Administrative Building, College of Veterinary and Animal Science, Bikaner

From 1955 to 1964 a total of 396 books were sent to the Veterinary College at Bikaner and 2,733 were sent to the College of Agriculture at Udaipur. Also 413 items of equipment were sent to the Veterinary College and 398 items to the College of Agriculture. The total value of the library and equipment sent during the 9 years was about $253,600.

E. THE EARLY ESTABLISHMENT OF A LAND GRANT TYPE OF STATE UNIVERSITY IN INDIA

From the beginning of the OSU program in Rajasthan, one objective was to develop a Land Grant type of university in the state with functions of extension, research and teaching. India had many so-called traditional types of colleges and universities which were not service oriented and were limited mainly to teaching. The research and extension functions were handled by the State Government.

The OSU group leader and team members and the executive visitors on many occasions discussed with officials and agricultural leaders in the state the need to combine the existing institutions in the state into one University with all three functions of teaching, research and extension education. It was reported that when OSU President Novice G. Fawcett made an executive visit to India, he was most influential with the Government officials of Rajasthan, convincing them that a Land Grant type of State University should be developed. By 1960, each state in India was being urged to develop such a university by the central government, especially by the Indian Council of Agricultural Research.

In December, 1960, the Governor of Rajasthan set up a Governing Board to manage and control the institutions in the state which would become the nucleus of a proposed university. This included the Rajasthan College of Agriculture at Udaipur along with its poultry farm and an extension wing, the College of Home Science operated by the Rajasthan Mahila Vidyaloya at Udaipur, the Agricultural Chemistry and Plant Pathology Sections of the State Department of Agriculture, and the Training Program for the staff working in the Intensive Agricultural Cultivation in Poli.

On May 9, 1962, the Rajasthan Legislative Assembly passed the Agricultural University Legislation establishing the "Rajasthan Agricultural University". It included the Rajasthan College of Agriculture, the S.K.N. College of Agriculture at Jobner, and the College of Veterinary and Animal Science at Bikaner. The legislation basicly was patterned from a Model Act which had been developed by the Indian Council of Agricultural Research in association with U. S. Land Grant Universities and U. S. Foundations.

In 1963, the Rajasthan Act was amended making it less like the Model Act and more in conformity with the Acts for traditional Indian Universities. The name was changed to the "University of Udaipur". These changes without doubt slowed down the development of the University in Rajasthan as a peoples' university, serving the entire state in Agriculture. The name change itself gave the impression that it was a local rather than a state-wide institution and it left out the emphasis on agriculture. The Maharana Bhupal (M.B.)College of Basic Sciences and Humanities at Udaipur became a college of the University. This was a relatively large, well established traditional-type institution, with an administration and faculty which did not have the concept of a service-oriented University nor an appreciation or understanding of agriculture. In addition, seven other small colleges, institutes and schools in the Udaipur area became associated/affiliated units of the University, including the Home Science College at Udaipur. These were more or less autonomous in their operation, but they required attention of the University Administration and they were included to some extent in policy making for the University. They also did not have

appreciation of agriculture and were devoted to teaching, rather than extension or research. This tended to diminish the Land Grant type university development in the state which would give equal importance to extension and research as to teaching.

In 1964, the College of Technology and Agricultural Engineering was authorized at Udaipur. Internal grading (rather than traditional external grading) and the semester system were introduced in the Colleges of Agriculture and the College of Veterinary and Animal Science, but not in other parts of the University, particularly the M. B. College of Basic Sciences and Humanities. A Director of Research in Agriculture was appointed in Udaipur in 1964.

F. ACCOMPLISHMENTS 1955-64.

Many accomplishments in Rajasthan through this OSU regional program could be detailed from 1955 to 1964. Some of the major benefits to the institutions and the State are summarized as follows:

1. Developed interest on the part of leaders in agriculture in the State to establish a Land-Grant type of State University service oriented to the people of the state with integrated functions of: education, research and extension.

2. Helped develop a state law to establish a Land Grant type of University in Rajasthan which was passed by the legislative assembly May 9, 1962.

3. Provided special advanced training in U. S. for 61 individuals from the State.

4. Improved the libraries at the two colleges in the state by supplying scientific books on agriculture, veterinary medicine and home economics.

5. Developed and improved laboratories in the fields of soils and agricultural engineering at Udaipur, and in Veterinary Anatomy and Veterinary surgery at Bikaner.

6. Helped initiate an extension education program by the University of Udaipur in the area around Udaipur.

7. Helped develop dairy herds and dairy production education at the colleges at Bikaner and Udaipur.

8. Helped design and provide equipment for a dairy processing plant at the College of Agriculture, in Udaipur.

9. Developed new educational materials and research on animal anatomy, especially of the camel, at Bikaner.

10. Helped develop and improve procedures and education in veterinary surgery.

11. Helped develop plans for a college of Technology and Agricultural Engineering at Udaipur.

12. Initiated and helped develop farm management education and extension - directed toward improved farmer use of agricultural technology.

13. Initiated education, research, and extension in poultry production by the University of Udaipur.

14. Helped develop educational and research programs and facilities in soil analysis at Rajasthan Agricultural College at Udaipur.

15. Started development and improvement of Home Economics Education for the State.

16. Advised on the registration and administration of student programs at the University of Udaipur.

17. Increased the professional competence of many faculty members in the College of Agriculture and Veterinary & Animal Science in Rajasthan as eleven OSU faculty members worked along side the Indian faculty members in teaching, research and extension.

18. New courses developed, new equipment introduced, new methods of teaching initiated, new youth organizations started, and a new life and enthusiasm generated in the colleges by The Ohio State University Faculty working on the campuses at Udaipur and Bikaner.

The Administration Building of the College of Agriculture at Jobner. Old fort in Rear.

Table I. THE OHIO STATE UNIVERSITY FACULTY ASSIGNED TO INDIA ON PROGRAM WITH STATE OF RAJASTHAN AND UNIVERSITY OF UDAIPUR 1955--1972

NAME	SPECIALTY	LOCATION IN INDIA	ARRIVED IN INDIA	DEPARTED INDIA
1a. T. Scott Sutton	Group Leader	Ludhiana	10/6/55	8/11/57
2a. Charles L. Blackman	Dairy Production	Bikaner & Udaipur	10/6/55	7/28/57
3a. J. D. Grossman	Veterinary Anatomy	Bikaner	7/56	5/11/58
4a. Dale Seiberling	Dairy Engineering	Ludhiana & Udaipur	1/7/57	3/17/57
5a. Russell O. Olson	Group Leader & Ag. Econ.	Ludhiana	11/57	9/5/59
6a. Delbert M. Byg	Agr. Engineering	Udaipur	5/6/58	5/30/62
7a. Willard F. Guard	Veterinary Surgeon	Bikaner	8/28/58	4/10/60
8a. Donald J. Hoff	Soils	Udaipur	7/1/59	5/63
9a. Raymond E. Cray	Group Leader & Agr. Education	Chandigarh	8/19/59	7/10/63
10a. Donald B. Robinson	Extension Education	Udaipur	7/12/62	5/15/64
b. Donald B. Robinson	Extension Education	Udaipur	10/1/65	9/30/67
11a. Robert M. Reeser	Farm Management	Udaipur	10/4/62	8/14/64
12ab. Wilbur B. Wood	Group Leader	Ludhiana	10/3/63	5/30/65
13ab. Paul C. Clayton	Poultry Science & Acting Group Leader	Udaipur	2/7/64	2/21/68
14a. Ronald B. Thompson	Registrar, Administration	Udaipur	4/1/64	8/30/64
15ab. Fanchon Warfield	Home Science	Udaipur	8/1/64	7/23/71
16b. Ralph D. Barner	Vet. Science & Acting Group Leader	Bikaner	6/17/65	1/19/71
17b. Robert E. Yoder	Agr. Research Admin.	Udaipur	8/1/65	6/30/67
18b. Leonard D. Baver	Chief of Party & Admin.	Udaipur	9/19/65	8/13/67
19b. Lawrence A. Best	Extension Education	Udaipur	10/16/67	2/14/71
20b. George R. Gist	Chief of Party & Admin.	Udaipur	10/29/67	1/31/70
21b. Leland O. Drew	Agric. Engineering	Udaipur	2/1/68	6/23/71
22b. William A. Wayt	Agric. Economics	Udaipur	1/3/69	3/21/69
23b. George R. Johnson	Animal Science	Udaipur	1/12/69	2/23/69

Table I, continued

NAME	SPECIALTY	LOCATION IN INDIA	ARRIVED IN INDIA	DEPARTED INDIA
24b. Francille Malloch	Home Management	Udaipur	1/15/70	3/24/70
25b. William E. Krauss	Research Admin.	Udaipur	2/2/70	4/15/70
26b. Garth A. Cahoon	Horticulture - Folier Analysis	Udaipur	2/2/70	4/23/70
27b. Ira A. Gould	Chief of Party & Admin.	Udaipur	9/4/70	9/30/72*

* Stayed in India to December 13, 1972 to help in closing of project during which time he was supported under another OSU Contract US/AID-147.

NOTE: Those faculty with (a) following the number were on the Regional Contract during the period October 1, 1955 to October 30, 1964. Those with (b) following the number were on the University of Udaipur Contract AID-148 during the period Nov. 1, 1964 to September 30, 1972.

Table 2. THE OHIO STATE UNIVERSITY
ADMINISTRATION OF
INTERNATIONAL AGRICULTURAL PROGRAMS -- INDIA

A. SENIOR ADMINISTRATORS	DATES	TRIPS TO INDIA
President Howard L. Bevis	1955-1956	--
President Novice G. Fawcett	1956-1972	1960
President Harold L. Enarson	1972-Present	--
Dean, College of Agriculture, Leo L. Rummell	1955-1960	1955, 1956
Dean, College of Agriculture & Home Economics, Roy M. Kottman	1960-Present	1962, 1968

B. CAMPUS COORDINATORS	DATES	TRIPS TO INDIA
Carl R. Reese, Coordinator	10/1/55-3/30/57	1956
Richard H. Bohning, Coordinator	10/1/57-6/30/64	1958, 1961, 1963
Raymond C. Cray, Coordinator	7/1/64-8/31/66	1965, 1966
Mervin G. Smith, Asst. Dean & Coordinator	9/1/66 - present	1967, 1968, 1969, 1970, 1971, 1972
Harold D. Bauman, Asst. Coordinator	9/1/66-10/15/68	--
John L. Parsons, Asst. Coordinator	12/1/68 - present	1971

Table 3. THE OHIO STATE UNIVERSITY EXECUTIVE VISITORS TO INDIA ON US/TCA or US/AID CONTRACTS - 1955-1972

DATES OF TRIP TO INDIA	NAME	TITLE
A. PRE-CONTRACT, 1955		
1955	Leo L. Rummell	Dean, College of Agriculture & Home Economics & Director, Ohio Agriculture Experiment Station
	T. S. Sutton	Associate Dean, College of Agriculture & Home Economics
B. REGIONAL CONTRACT, 1955-1964		
1956	Leo L. Rummell	Dean, College of Agriculture & Home Economics & Director, Ohio Agriculture Experiment Station
	C. R. Reese	Campus Coordinator
1957-1958	Richard H. Bohning	Campus Coordinator
	Carlton S. Dargusch	O. S. U. Trustee
1959	T. S. Sutton	Associate Dean, College of Agriculture & Home Economics
1960	Novice G. Fawcett	President, The Ohio State University
1961	Richard H. Bohning	Asst. Dean, College of Agriculture & Home Economics & Campus Coordinator
	Forest G. Ketner	O. S. U. Board of Trustees
1962	Roy M. Kottman	Dean, College of Agriculture & Home Economics, & Director, Ohio Agricultural Research & Development Center
	William E. Krauss	Associate Director, Ohio Agricultural Research & Development Center
1963	Richard H. Bohning	Assistant Dean & Campus Coordinator, College of Agriculture & Home Economics
	Wilbur B. Wood	Director, Ohio Cooperative Extension Service

Table 3, continued

DATES OF TRIP TO INDIA	NAME	TITLE
C. UNIVERSITY OF UDAIPUR CONTRACT, 1964-1972		
1964	T. S. Sutton	Associate Dean, College of Agriculture & Home Economics
	Ronald B. Thompson	Executive Dean & Registrar, OSU
1965	T. S. Sutton	Associate Dean, College of Agriculture & Home Economics
1966	Raymond E. Cray	Campus Coordinator
1967	Mervin G. Smith	Asst. Dean & Campus Coordinator, Int'l. Affairs, College of Agriculture and Home Economics
	Austin E. Ritchie	Assistant Dean, Academic Affairs, College of Agriculture & Home Economics
1968	Roy M. Kottman	Dean, College of Agriculture & Home Economics, Director, Ohio Agricultural Research & Development Center, and Director, Ohio Cooperative Extension Service
	William E. Krauss	Associate Director, Ohio Agricultural Research & Development Center
1969	Mervin G. Smith	Asst. Dean & Campus Coordinator, Int'l. Affairs, College of Agric. & Home Econ.
	James M. Beattie	Associate Director, Ohio Agricultural Research and Development Center
	Lois A. Lund	Associate Dean, College of Agriculture and Director, School of Home Economics
	Lois Gilmore	Associate Director, School of Home Economics
1970	Mervin G. Smith	Asst. Dean & Campus Coordinator, Int'l. Affairs, College of Agric. & Home Econ.
	Ira A. Gould	Chairman, Dept. of Dairy Technology
1971	Mervin G. Smith	Asst. Dean & Campus Coordinator, Int'l. Affairs, College of Agric. & Home Econ.
	Robert W. Teater	Associate Dean, College of Agriculture and Home Economics
1972	Mervin G. Smith	Asst. Dean & Campus Coordinator, Int'l. Affairs, College of Agric. & Home Econ.
	Orlo L. Musgrave	Associate Director, Ohio Cooperative Extension Service.

Table 4. U. S. TRAINING OF INDIVIDUALS FROM RAJASTHAN AND UNIVERSITY OF UDAIPUR Programmed, Managed and Supported by OSU - 1955-1972

A. THOSE WHO HAD COMPLETED TRAINING BY SEPT. 30, 1972

Name	Field of Training	Period of Training No. Months	Date	Degree/ Program	Present Position
By U. S. Technical Cooperation Administration, Prior to OSU Contract, 1952-55.					
1. K. M. Mehta	Soil Conservation	8	1952	Special	Rajasthan State Govt.
2. M.S. Godhara	Village Institute Training	11	1954	Special	Rajasthan State Govt.
3. Mukulika Sen	Home Economics	2 1/2	1954	Special	Rajasthan State Govt.
4. G.S. Shikla	Wood Preservation	2	1954	Special	Rajasthan State Govt.
5. C.M. Mathur	Tropical Forestry	4	1955	Special	Rajasthan State Govt.
OSU Regional TCA Contract, 1955-64					
6. K.N. Nag	Agr'l. Engineering	12	1957-58	M.S.	Dean, CTAE, Udaipur
		24	1966-67	Ph.D.	
7. J.H. Solanki	Embroyology & Anatomy	12	1957-58	M.S.	Expired
8. K. Rathore	Extension	6	1958	Special	Reader, RCA, Udaipur
9. P.D. Mathur	Veterinary Medicine	12	1958-59	M.S.	Lecturer, Bikaner
10. M.K. Doshi	Preventive Medicine	12	1958-59	M.S.	Rajasthan State Govt.
11. C.P. Trivedi	Agronomy	12	1958-59	M.S.	Assoc. Reader, RCA, Udaipur
12. P.B. Lal	Soils	12	1958-59	M.S.	Assoc. Reader, RCA, Udaipur
13. A.P. Asopa	Animal Physiology	12	1958-59	M.S.	Lecturer, Bikaner
14. M.L. Chaudhary	Farm Organization	4	1958	Special	Rajasthan State Govt.
15. M.L. Singhvi	Library Science	12	1959-60	M.S.	Expired
16. P.N. Mehrotra	Bacteriology & Pathology	12	1959-60	M.S.	Professor, Bikaner
17. R.S. Chaudhary	Farm Organization	4	1959	Special	Rajasthan State Govt.
18. D.P. Gupta	Poultry Development	6	1959	Special	Rajasthan State Govt.
19. B.S. Rathore	Agricultural Economics	12	1959-60	M.S.	Reader, RCA, Udaipur
20. K.R. Lodha	Parasitology	12	1959-60	M.S.	Reader, Bikaner
21. Balbir Singh	Poultry	12	1959-60	M.S.	Reader, Bikaner
22. P.M. Chatur	Farm Organization	4	1960	Special	Rajasthan State Govt.
23. P.D. Bhargava	Breeding & Production of Hybrid Maize	12	1960	M.S.	Rajasthan State Govt.
24. Devendra Sharma	Agr'l. Information	4	1960	Special	Rajasthan State Govt.
25. S.S. Verma	Food Production & Preservation	12	1960-61	M.S.	Lecturer, RCA, Udaipur

Name	Field of Training	Period of Training No. Months	Date	Degree/ Program	Present Position
26. J.F. Correia	Irrigation	12	1960-61	M.S.	Reader, CTAE, Udaipur
27. C.S. Mathur	Animal Nutrition	12	1960-61	M.S.	Reader, Bikaner
28. R.K. Muralia	Agr'l. Engineering	24	1960-62	Ph.D.	Reader, Jobner
29. J.S. Dhaliwal	Animal Breeding	18	1961-63	M.S.	Unknown
30. B.S. Jerry	Dairy Manufacturing	24	1961-63	M.S.	Lecturer, RCA, Udaipur
31. S.P. Ohri	Dairy Manufacturing	21	1961-63	M.S.	Reader, Bikaner
32. K.C. Pundrik	Vegetable Production	18	1962-64	M.S.	Lecturer, RCA, Udaipur
33. R.K. Patel	Farm Management	25	1962-64	Ph.D.	Ext. Officer, IARI, Delhi
34. P.B. Khatri	Dairy Technology	10	1962-63	Special	Lecturer, RCA, Udaipur
35. R.N. Muralia	Weed Control	18	1962-64	M.S.	Lecturer, RCA, Udaipur
36. K.K.S. Chauhan	Agr'l. Marketing	22	1962-64	Ph.D.	Institute of Mgmt. Ahmedabad
37. H.S. Jhala	Crop Production	4	1962	Special	Rajasthan State Govt.
38. S.V. Jain	Survey & Reclamation Saline & Alkaline Soils	6	1963	Special	Rajasthan State Govt.
39. B.B. Roy	Soil Survey & Land Use	4	1963	Special	Rajasthan State Govt.
40. K.L. Rao	Vet. Public Health	18	1963-65	M.S.	Lecturer, Bikaner
41. P.R. Jatkar	Microbiology	21	1963-65	M.S.	Lecturer, Bikaner
42. P.C. Thapan	Dairy Husbandry	30	1963-66	Ph.D.	Reader, Jobner
43. B.K. Kaul	Plant Genetics	30	1963-66	Ph.D.	Reader, RCA, Udaipur
44. D.K. Garg	Agronomy	27	1963-65	Ph.D.	Unknown
45. N.C. Bhurat	Extension Education	9	1964	Special	Rajasthan State Govt.
46. K.L. Sharda	Agricultural Extension	4	1964	Special	Rajasthan State Govt.
47. R.S. Vijay	Agricultural Extension	6	1964	Special	Rajasthan State Govt.
48. Mikat Behari	Irrigation & Drainage	6	1964	Special	Rajasthan State Govt.
49. O.P. Mathur	Forestry	6	1964	Special	Rajasthan State Govt.
50. S.P. Seth	Soil Survey & Land Use	6	1964	Special	Rajasthan State Govt.
51. B.M. Trivedi	Watershed Management	6	1964	Special	Rajasthan State Govt.
On Both Regional and University of Udaipur Contract					
52. J.C. Sharma	Entomology	15	1964-65	Special	Reader, RCA, Udaipur
53. S.N. Saxena	Bio-Chemistry	13	1964-65	Special	Professor, RCA, Udaipur
54. K.S. Singh	Agricultural Chemistry	12	1964-65	Special	Reader, Jobner
55. S.L. Mathur	Extension Education	24	1964-66	Ph.D.	Lecturer, RCA, Udaipur
56. H.C. Sharma	Horticulture	30	1964-67	Ph.D.	Reader, Jobner
57. B.S. Sirdhana	Plant Pathology	30	1964-67	Ph.D.	Reader, RCA, Udaipur
58. M.L. Jain	Agr'l. Engineering	18	1964-66	M.S.	Reader, Jobner
59. C.B. Vyas	Preventive Medicine	18	1964-66	M.S.	Lecturer, Bikaner
60. Amrit Lal	Sheep Husbandry	36	1964-68	M.S.	Reader, Bikaner
61. Anand Prakash	Animal Breeding	18	1964-66	Ph.D.	Reader, RCA, Udaipur

Name		Field of Training	Period of Training No. Months	Date	Degree/ Program	Present Position
62.	P.V. Rao	Animal Husbandry	9	1965	Special	Rajasthan State Govt.
63.	S.H. Chawla	Animal Husbandry	6	1965	Special	Rajasthan State Govt.
64.	B.M. Gupta	Plant Pathology	24	1965-66	Ph.D.	Reader, RCA, Udaipur
65.	H.C.K. Mathur	Res. Method & Statistics	24	1965-66	Ph.D.	Assoc. Reader, RCA, Udaipur
66.	S.N. Chaturvedi	Plant Physiology	30	1965-68	Ph.D.	Lecturer, RCA, Udaipur
67.	M.R. Bajpai	Soil Water Management	24	1965-66	Ph.D.	Reader, Jobner
68.	G.S. Saxena	Soil Science	24	1965-66	Ph.D.	Soil Physicist, Jobner
69.	R.C. Mehta	Extension Education	24	1965-67	Ph.D.	Reader, RCA, Udaipur
70.	V.S. Mehta	Poultry Husbandry	24	1965-66	M.S.	Research Officer, Bikaner
71.	B.K. Joshi	Dairy Husbandry	14	1965-67	M.S.	Lecturer, Bikaner
72.	V.D. Sharma	Swine Husbandry	14	1965-67	M.S.	Lecturer, Bikaner
73.	P.L. Arya	Veterinary Pathology	51	1965-69	Ph.D.	Lecturer, Bikaner
74.	R.N. Gautam	Animal Prod. Genetics	18	1966-68	N.S.	Lecturer, Bikaner
75.	U.K. Vyas	Poultry Pathology	18	1966-68	M.S.	Instructor, Bikaner
76.	A. Khangarot	Agronomy	33	1966-69	Ph.D.	Reader, RCA, Udaipur
77.	A.K. Bhargava	Veterinary Surgery	42	1966-70	Ph.D.	Haryana Agric. Univ.
78.	M.M. Jain	Seed Testing	3	1967	Special	Rajasthan State Govt.
79.	R.S. Rawat	Dairy Technology	12	1967-68	Special	Professor, RCA, Udaipur
80.	Fateh Lal	Agronomy	12	1967-68	Special	IARI, Udaipur
81.	J.C. Kalla	Agr'l. Economics	42	1966-70	Ph.D. Candidate	Lecturer, Udaipur
82.	R.D. Singh	Plant Pathology	12	1969-70	Special	Lecturer, RCA, Udaipur
83.	H.G. Singh	Soil Fertility & Management	12	1969-70	Post. Doc.	Professor, RCA, Udaipur
84.	J.N. Kaviraj	Tillage Technology	10	1969-70	M.S.	Lecturer, CTAE, Udaipur
85.	K.L. Sharma	Education Teaching Methods	3	1970	Post. Doc.	Professor, SBH, Udaipur
86.	K.S. Kushwaha	Entomology	6	1970	Post. Doc.	Professor, RCA, Udaipur
87.	C.P. Ghonsikar	Agronomy	36	1967-70	Ph.D.	Lecturer, RCA, Udaipur
88.	R.A. Singh	Poultry Science	38	1967-70	Ph.D.	Haryana Agric. University
89.	R.K. Yadava	Dairy Science	37	1967-70	Ph.D.	Lecturer, RCA. Udaipur
90.	V.J. Shrikhande	Dairy Science	26	1968-70	Ph.D.	Reader, Jobner
91.	B.P. Chakravarti	Plant Pathology Bacteriology	6	1970	Post. Doc.	Reader, Agr.Exp. St., Udaipur
92.	J.P. Agnihotri	Plant Pathology Virology	6	1970	Post. Doc.	Reader, Agr.Exp. St., Udaipur
93.	Sri Niwas	Agronomy	16	1969-71	Special	Lecturer, RCA, Udaipur
94.	S.S. Acharya	Agr. Economics	12	1969-70	Special	Reader, Jobner
95.	Y.C. Agrawal	Agr. Engineering	27	1969-71	M.S.	Lecturer, CTAE, Udaipur
96.	O.S. Rathore	Agr. Education Extension	36	1968-71	Ph.D.	Lecturer, RCA, Udaipur
97.	O.N. Kunzru	Agr. Education Extension	24	1969-71	Ph.D.	Central Govt. Veterinary Inst.
98.	V.P. Mital	Entomology	6	1971	Post. Doc.	Lecturer, RCA, Udaipur
99.	O.P. Gupta	Agronomy	6	1971	Post. Doc.	Reader, RCA, Udaipur

Name	Field of Training	Period of Training No. Months	Date	Degree/ Program	Present Position
100. M.D. Mathur	Vet. Anatomy	40	1968-71	Ph.D.	Reader, Bikaner
101. S.P. Pathak	Horticulture	42	1968-72	Ph.D.	Lecturer, RCA, Udaipur
102. Jabar Singh	Agr. Engineering	24	1970-72	M.S.	Lecturer, CTAE, Udaipur
103. Mahnohar Shyamji	Food Science & Nutrition	12	1971-72	Special	Lecturer, RCA, Udaipur
104. R.K. Bhargava	Dairy Science	21	1971-72	M.S.	Lecturer, RCA, Udaipur
105. D.B. Kalra	Animal Science	36	1971-72	Ph.D.	Lecturer, Jobner
106. Fateh Karan	Agronomy	18	1971-72	Special	Lecturer, Jobner
107. Mary Wellington*	Home Economics	48	1968-72	Ph.D.	Reader, Udaipur

*. On OSU and private support

B. THOSE WHO WERE STILL IN TRAINING IN THE U. S. OCTOBER 1, 1972

Name	Field of Training	Faculty Advisor	Degree/ Program	Location in India	Date of Arrival	Date Expected to Return
108. S. K. Jain	Dairy Science	W. Gomes	Ph.D.	Jobner	8/69	12/72
109. R.L. Lakhotia	Poultry Science	F. Stephens	Ph.D.	Bikaner	8/69	12/72
110. N.S. Katole	Agronomy	P. Henderlong	Ph.D.	Udaipur	1/71	1/74
111. G.P. Khurana	Agronomy	L. Wilding	Ph.D.	Jobner	8/69	11/72
112. N.C. Saxena	Agr. Engineering	H. Barre	Ph.D.	Udaipur	8/68	10/72
113. P. Sundaram	Home Economics	F. Firebaugh	Ph.D.	Udaipur	4/71	4/74

Table 5. UNIVERSITY OF UDAIPUR
ADMINISTRATIVE VISITORS TO THE OSU

A. REGIONAL CONTRACT, 1955-1964

Name	Title	Dates of Trip to OSU
A. Rathore	Dean, Rajasthan College of Agriculture, Udaipur	1963
N. Prasad	Dean, S.K.N. College of Agriculture, Jobner	1963
Mohan Singh	Dean, College of Veterinary and Animal Science, Bikaner	1963

B. UNIVERSITY OF UDAIPUR CONTRACT, 1964-1972

G. S. Mahajani	Vice Chancellor, University of Udaipur	1965 and 1968
G. B. Bakori	Post Graduate Dean, University of Udaipur	1966

III. OSU/AID CONTRACT PROGRAM WITH THE UNIVERSITY OF UDAIPUR 1964--1972

When the legislature of the State of Rajasthan passed an Agricultural University Act and an Agricultural University was started in 1962, the OSU program working with the University and the State was still part of the contract of The Ohio State University with U. S. International Cooperation Administration (ICA-W630) which included the OSU work with the entire northwestern region of India. The State of Punjab in this region earlier had set up a state university, the Punjab Agricultural University. In 1964, it was decided that there should be separate contracts with OSU for each Indian state university. In this way each program could be more sharply defined, could be expanded and would have a separate OSU group leader and administrator.

The OSU contract with the U. S. Agency for International Development (AID-nesa 148) for the cooperative program with the State of Rajasthan and the University of Udaipur, the state agricultural university, replaced the ICA-W630 contract, effective Nov. 1, 1964, and continued through September 30, 1972.

A. PURPOSES AND OBJECTIVES OF THE PROGRAM

The general purpose of The Ohio State University AID program as stated in the contract document in 1964 was as follows:

> "...The Ohio State University ... will assist the State of Rajasthan, India, in the development of the University of Udaipur, an institution to serve agriculture and the rural economy of the State through the expansion of knowledge and diffusion of it among the people. The Contractor (The Ohio State University) will assist the State and the University in developing policies, plans and programs and will advise on the organization, administration and operation of the University; on the development of resident instruction, extension and research programs on ways and means by which the sons and daughters of rural people and others may be provided opportunities for training in modern agriculture; and on the planning, construction and maintenance of physical facilities and equipment of the University and associated undertakings."

Thus the new contract was specifically to help develop a state university along the pattern of the Land-Grant Institutions in the United States. The general requirements for developing such an institution had been discussed with the Rajasthan State officials from the beginning in 1955 and these requirements were more or less accepted. These were (1) appropriate State Act/Statutes (although these had been modified and apparently only partly accepted by Rajasthan) (2) adequate state financial support (3) autonomy of the institution (4) full responsibility of the

University for statewide agricultural research and extension education (5) integration of teaching, research, and extension within the University (6) modernization of the academic practices in respect to term scheduling, internal examinations, and teaching methods.

During the course of the program the more specific needs and criteria for the development of the University of Udaipur were more clearly delineated and these became the basis for evaluating the progress being made by the University. These also became part of the objectives of the OSU program the last year or two and they would have been the objectives of the program if it had been continued to about 1976 as planned. These were as follows:

1. Appropriate State Act/Statutes.
2. Sound long-range plans for capital improvement and academic development and their effective implementation.
3. An adequate physical plant.
4. Adequate financial support from all sources.
5. Effective integration of teaching, research, and extension education.
6. Adequate number of qualified staff.
7. Curriculum/teaching relevant to needs of the student/graduate.
8. University programs in research and extension education relevant to the needs of agriculture in the state.
9. Effective administration performance.
10. Sound functional professional linkages with other Indian and foreign institutions.

Each of these items will be discussed later in this report in evaluating the status of the University as of September 30, 1972 at the termination of the OSU/AID program.

B. THE OSU/AID PROGRAM

As with the previous regional program, the program by The Ohio State University consisted of three parts: (1) Assigning of individual OSU faculty members to the University of Udaipur for periods varying from a few weeks to two or more years. (2) Programming, supervising, and financing both advanced academic and special training of University of Udaipur faculty at OSU and other U. S. institutions in accordance with developmental needs of the University of Udaipur, and (3) purchasing and shipping to the University of Udaipur library materials, laboratory equipment and other supplies and materials not available in India, but needed for the development of the University.

The Ohio State University US/AID program with the University of Udaipur was a complex operation considering all of the agencies involved: The University of Udaipur, The Rajasthan State Government, The Central Government of India, the USAID Mission in India, the USAID in Washington, D. C., and The Ohio State University. More specifically the program was conceived as providing for an intimate collaboration between two institutions, The Ohio State University and the University of Udaipur, each dedicated to the same goals and anticipating mutual benefits, and that this collaboration could continue after the AID contract program terminated.

Administration and Library Building
on the new Campus of the University of Udaipur
at Udaipur

However, this viewpoint was only partly accepted or promoted by many of the people in the two central Governments, who had a more narrow conception of the program of providing only assistance to India.

The Ohio State University costs of the program were financed mainly by USAID through the contract. Besides the dollar support the USAID Mission provided rupee support in India from U. S. owned rupees generated from U. S. exports to India. Rupees were used to pay for OSU faculty special expenses and costs in India, including the various allowances for education, housing, and transportation. Trust fund rupees were used to finance special demonstration and developmental projects on which OSU faculty and University of Udaipur faculty cooperated and this enabled the OSU faculty to accomplish much more as will be indicated later in this report. The Indian Government, both Central and State government, provided funds for the University of Udaipur development program including some of the expenses for OSU faculty, some costs related to the training of the Indian faculty, and provision of equipment and supplies.

C. OSU FACULTY ASSIGNED TO UNIVERSITY OF UDAIPUR

Three of the OSU faculty who were assigned to Rajasthan under the Regional contract in 1964 were continued on the new separate contract AID/nesa 148 for the program with the University of Udaipur, (Table 1): Wilbur B. Wood, Group Leader; Paul C. Clayton, Poultry Science and later Acting Group Leader; and Fanchon Warfield, Home Science. Another OSU faculty member, Donald B. Robinson, Extension Education, who had been on a two-year assignment on the Regional Contract, was asked to return after one year on the new contract.

A total of 16 OSU faculty members were assigned various lengths of time at the University of Udaipur from 1964-1972. Twelve of these had not been previously on the regional contract. Of the total 16 faculty members, 11 served 2 year terms or more, and 5 had short term assignments. One of the long term OSU faculty members was stationed at the Bikaner Campus, and all of the others were headquartered at Udaipur. Some of the OSU faculty members stationed at Udaipur, however, worked part of the time at the other campuses, particularly the Jobner campus. The Group Leaders (later called Chiefs of Party) worked with the entire university at all locations. During this contract period 1964-72, OSU had four different Group Leaders or Chiefs of Party. The first one was part time for 8 months, having been the Group Leader on the previous Regional Contract, and continuing on the separate two contracts until someone else could assume the position.

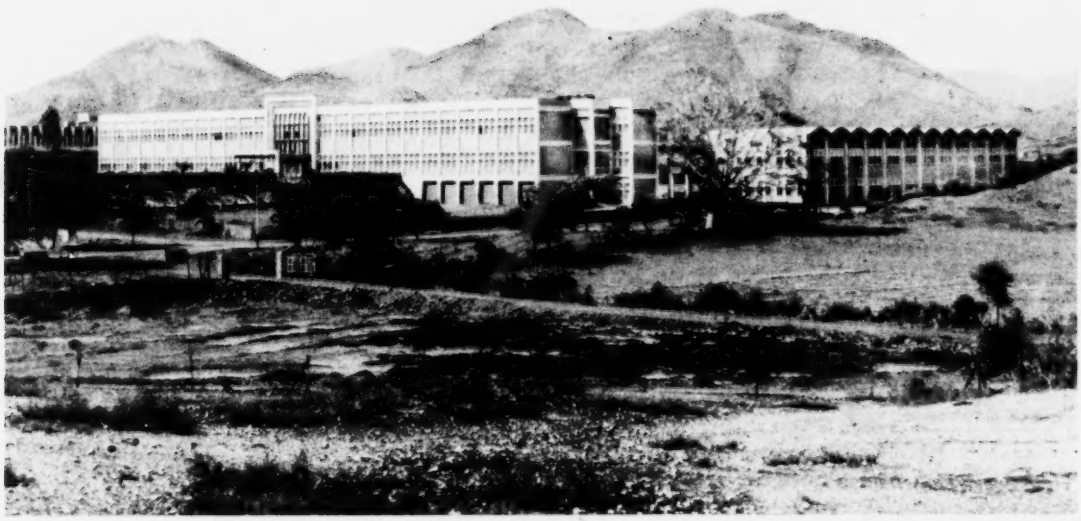
Two other individuals served in an acting capacity in this leadership position during short intervals between departure and arrival of the regular Chiefs of Party.

The technical areas on which the long term OSU faculty worked at the University of Udaipur were Poultry Science, Home Science, Veterinary Science, Agricultural Engineering, Agricultural Research Administration and Extension Education. The areas of the short term faculty were Agricultural Economics, Animal Science, Home Science(Management),Horticulture (Foliar Analysis), and Research Administration.

D. OSU ADMINISTRATIVE AND FACULTY SUPPORT

The support for the cooperative program between OSU and the University of Udaipur by the OSU administration and faculty became stronger with each passing year of the program, as the number of individuals from both institutions who were involved with the program increased. A widening genuine interest and pride among faculty developed within both institutions for their relationship and for the success of each other.

The vital contribution and cooperative support for the program by the OSU administration and faculty on the OSU campus at Columbus, Ohio, continued on the new contract as it was on the regional contract. The top administration and coordinating personnel are indicated in Table 2. As time went on, more of the departments of the college and faculty members were involved in making faculty assignments and in the training program of the University of Udaipur faculty in the United States.



The New Campus of the University of Udaipur
at Udaipur with the New Building of the
College of Technology and Agricultural Engineering

The campus coordinator continued his vital contribution to the program by (1) recruiting, orienting, and backstopping OSU faculty assigned to the field, (2) managing and facilitating the training program for the University of Udaipur faculty in the United States, and (3) purchasing and shipping library books, equipment and supplies essential to the program.

The Ohio State University administrators continued to make executive trips to India to observe, advise and help determine the policies and program (Table 3). This was most helpful after they returned in providing understanding and communications within The Ohio State University about the program, which in turn broadened and strengthened the support of the program by the University.

The Council of United States Universities for Rural Development was organized in December, 1964. The five U. S. universities working in India were the members of the Council, with Pennsylvania State University becoming the sixth member in 1966. This Council was given modest financial support by AID from 1967 to 1972. The Council significantly facilitated the interchange and cooperation among the Universities, USAID/Washington, USAID/India, The Indian Agricultural Universities, The Indian Council for

Agricultural Research, and other agencies. The campus coordinators from the five universities previously had some interchange and cooperation on the regional contract, but starting in 1964 and especially since 1967, the Council (CUSURDI) facilitated this much more, both in the United States and in India.

E. U. S. TRAINING OF FACULTY FROM THE UNIVERSITY OF UDAIPUR

The advanced training of faculty members from the University of Udaipur was considered a very important part of the OSU contract from 1964 to 1972.

The last 10 of the trainees who started under the support of the OSU regional contract completed their training on the new OSU University of Udaipur contract. Including these ten individuals a total of 62 University of Udaipur faculty members received training in the United States from 1964 to 1972 (Table 4). Six of these were still in the United States at The Ohio State University when the contract was terminated September 30, 1972. They were continuing their training to complete the Ph.D. degree with direct USAID financing and under the direction of the International Affairs Office of The College of Agriculture and Home Economics of The Ohio State University. In addition to the regular training, the Vice Chancellor of the University of Udaipur was brought to the U. S. in 1965 and 1968 and the Post Graduate Dean in 1966. (Table 5)

A total of 113 individuals from Rajasthan and the University of Udaipur received training in the U. S. from 1952 to 1972, mostly under the OSU/AID contracts. Of these 78 were still on the faculty of the University of Udaipur in 1972, located on the three campuses as follows: 46 at Udaipur, 19 at Bikaner and 13 at Jobner. Twenty-five of the trainees are employed with the Government of Rajasthan; 2 are with the National Government Institutes, 4 are at universities in other states, 2 are in other unknown employment and 2 have expired.

Most of the training since 1964 has been for a Ph.D. degree while the training prior to 1964 was mostly for a M.S. degree or for special (non-degree) training. Since 1964 the training was for the following: 37 Ph.D. or Post Doctoral; 12 M.S. and 13 special.

Most of the departments in Agriculture and Veterinary Science have had one or more persons trained in the United States (Table 6); however, there are many departments on some of the campuses which do not have anyone trained in the U. S. or anywhere outside of India. About 15% of the estimated 475 faculty members in the University of Udaipur have had training in the United States supported under OSU/AID contracts.

Although the training and quality of the faculty of the University of Udaipur has increased and improved, much more needs to be done. Many of those provided training 10 years or more ago under the earlier regional contract program need additional training and up-to-date training. Advanced degree programs for talented younger faculty members from the newer Colleges of Technology and Agricultural Engineering and Home Science, is a true need. Post doctoral programs should be provided in carefully

selected areas, where the training obtained can be put to immediate use. Subjects of dryland farming, water management, livestock breeding and management, agricultural marketing, and meat processing are among those which justify consideration for training.

Special training for research and teaching for selected faculty members in the College of Basic Science and Humanities is desired, specifically where their disciplines are to be integrated with the agricultural programs. A most urgent need is to provide management training programs for selected Department Heads and qualified faculty members. Such programs should be designed to develop administration/management competence among those who, in the future, will be called upon to assume higher responsibilities in institutional operations.

The College of Home Science Building,
University of Udaipur, at Udaipur

Special Training for Administrators.

It was considered valuable for administrators of the University of Udaipur to come to the U. S. to visit OSU. This not only was beneficial

to the administrators in learning about the land grant type of institution in the U. S., but it was helpful to the entire program in making it a university to university relationship. Vice Chancellor G. S. Mahajani was brought to the U. S. twice, 1965 and 1968 for this purpose. He was able to get acquainted with many of the administrative people of the OSU. This was quite important in increasing the understanding and willingness to cooperate between the two institutions. Consideration had been given to bringing a number of other administrative people from the University of Udaipur and officials from the State Government who were related to the development of the University of Udaipur, but this did not take place. If this had been done, it could have been helpful in a more rapid development of the University of Udaipur.

Special OSU Land Grant University Course.

For those in training at The Ohio State University a special course for credit was provided on "Agricultural Organization and Administration". This emphasized the principles involved in organization, administration and function of a Land-Grant type of University. Nearly all those who were in training from the University of Udaipur from 1967 to 1972 took this course. This was expected to be helpful to them as they returned and played their role in the development of the University of Udaipur.

Seminars for Returned Faculty Trained in the U. S.

In 1964 the first seminar was held at Udaipur for the individuals from the northwestern region of India who had participated in The Ohio State University/AID training program in the United States.

Two additional seminars for these faculty members who had been in the U. S. training program and for the administrators of the University of Udaipur, were held in 1966; one at the Bikaner campus for those from Bikaner and another at the Udaipur campus for those from both Jobner and Udaipur.

One other seminar for all the faculty returned from U. S. training and administrators of the University of Udaipur was held in 1969.

These seminars were considered valuable in order to continually evaluate and improve the training program, to improve the individual's effectiveness when he returned, and to stimulate his Indian University to make the best use of the training received by its faculty in the development of the organization and program of the University.

Udaipur OSU Alumni Associate Chapter

A very strong affinity for The Ohio State University developed among those faculty and administrators of the University of Udaipur who had been in training at The Ohio State University. This led to the organization of an associate chapter of The Ohio State University Alumni Association at Udaipur in 1970, with a membership of 63. A certificate was presented to them in 1972 from The Ohio State University Alumni Association.

Table 6. PROFESSIONAL AREAS OF TRAINING IN U.S. OF INDIVIDUALS FROM RAJASTHAN AND UNIVERSITY OF UDAIPUR FROM 1952 to 1972, AND PRESENT EMPLOYMENT.

PROFESSIONAL AREA	TOTAL	UNIVERSITY OF UDAIPUR			STATE OF RAJASTHAN	OTHER LOCATION
		UDAIPUR	JOBNER	BIKANER		
Extension Education & Communication	10	4			5	1 Nat. Vet. Inst.
Ag. Engineering	8	6	2			
Soils & Agr'l. Sci.	12	3	3		6	
Agronomy	11	7	1		2	1 unknown
Plant Breeding	2	1			1	
Botany	3	2	1			
Horticulture	3	2	1			
Forestry	3				3	
Plant Pathology	5	5				
Entomology	3	3				
Veterinary Sci.	12			9	1	1 expired 1 at Haryana Ag. Univ.
Animal Science	9	1	1	4	2	1 unknown
Poultry Science	6			5		1 Haryana Ag. Univ.
Dairy Science	6	1	3	1		1 Haryana Ag. Univ.
Dairy Technology	3	2		1		
Ag. Economics	8	2	1		3	1 Inst. of Mgt. Ahmedabad 1 Indian Ag. Res. Inst.
Library Science	2	1				1 expired
Food Processing & Nutrition	2	2				
Home Economics	3	2			1	
Education	1	1				
Statistics	1	1				
Total	113	46	13	19	25	10

F. LIBRARY MATERIALS, EQUIPMENT AND SUPPLIES PROVIDED

Under the OSU/AID contract with the University of Udaipur, library books, laboratory equipment and supplies were provided from the United States by The Ohio State University to support the program for development of the University of Udaipur. These materials could not be purchased in India, but were considered essential for the program.

About 725 books were sent from the U. S. for the University of Udaipur libraries during the 8 years, 1964-72. This was much less than the 3,129 books sent during the previous 9 years under the regional contract. This amounted to 3,854 books covering the entire 17 years.

About 200 major items of equipment were purchased and shipped by The Ohio State University to the University of Udaipur from 1964-1972. This added to the 811 items sent from 1955-64 made a total of about 1011 major items of equipment provided over the 17 years. Besides these major items thousands of repair parts and small items were sent, especially the last few years. The need for these repair parts became very important in order to keep the equipment usable that had been provided previously. This became a time consuming job for the Chief of Party in India and the campus coordinator and others at The Ohio State University to describe, purchase, ship and receive these items.

The total value of the equipment provided from 1964-68 was approximately $79,000. This added to that provided previously made a total of about $332,000 of library books, equipment, and materials purchased and shipped over the 17 years by The Ohio State University under the AID contracts.

Besides all of these materials purchased and shipped, many books, journals, and publications were sent as gifts to the University of Udaipur over the years from The Ohio State University, the Ohio Cooperative Extension Service, the Ohio Agricultural Research and Development Center, and many individuals including OSU faculty who were especially interested.

It is very difficult to measure directly the benefits of these materials, but it is evident that the faculty and the University considered these highly beneficial. Initiation of many research projects, extension projects, and various phases of the teaching program at the University of Udaipur could not have been done without these materials. Certainly many other phases of the work could not have been conducted as well as they were if these materials had not been made available.

G. DEMONSTRATION AND DEVELOPMENTAL PROJECTS

An important factor in the success of the OSU faculty who were assigned to India was the projects with which they were directly associated whereby they could demonstrate and initiate development of various aspects of teaching, research, and extension. These projects were developed and managed cooperatively by the OSU faculty members and India faculty members. They were financed with rupees provided by the USAID mission from Trust Funds. The projects consisted of both (a) small/short term - less than 2500 rupees (7.5 rupees for $1) and (b) large/long term - up to about 400,000 rupees.

The Udaipur/OSU Alumni Associate Chapter
when they were presented a certificate
from the OSU Alumni Association in 1972.

The large rupee projects required formal approval of the OSU and the University of Udaipur administrators and also the US/AID Mission and the Government of India.

These projects made the difference with many of the OSU faculty as to whether or not they were able to do many things. These were not the only projects with which the OSU faculty worked. However, often finances were not available from the University of Udaipur or any other source in order to carry on demonstrations or to initiate development of new and improved programs. After the projects had demonstrated the value of the program, the University or State, in many cases assumed the financing and carried forward with them. Evidence is clear that these projects made significant and lasting contributions to the growth and development of the University of Udaipur and to the improvement in the quality and capacity of the faculty and administrators. Research facilities were improved, meaningful research programs were initiated, teaching laboratories and methods were improved, and extension education equipment, practices and programs were enhanced.

About 26 large projects were conducted from 1964 to 1972. Some smaller projects were conducted each year. A brief evaluation of each of the large projects and of some of the small projects associated with the long term faculty are presented here.

1. Extension Poultry Demonstration Flocks

--1964-68, About 25,000 rupees. OSU Professor Paul C. Clayton

This project was most important in developing modern poultry production farm units in the villages of the Udaipur area. The funds were used to finance and establish 3 or 4 village demonstration production units on farms in each of the 6 blocks (political subdivision) in the Udaipur area. The income from the investment from the units on these farms was placed into a revolving fund operated by the Extension Wing of the College of Agriculture and used to start additional poultry production units. During the first two years, 20 to 25 units were started and additional units were added as funds became available. The Extension Wing of the College of Agriculture continued to operate the program after Dr. Clayton completed his assignment and it has continued as an ongoing program. A significant increase in modern poultry production has taken place in the Udaipur area and this project was the major factor in this development.

2. Demonstration of the Preparation of a Balanced Poultry Ration on a Small Scale Using Maximum Amount of Local Ingredients and Waste Products.

--1966-68, about 22,500 rupees. OSU Professor Paul C. Clayton

This project was operated in conjunction with the village poultry production farm demonstration units in project 1. At the time this project was started it was impossible to purchase a balanced poultry ration in the Udaipur area. This project provided equipment and operation of a small poultry feed manufacturing center. A revolving fund was set up for the purchase of ingredients. Large quantities of waste or by-product ingredients were used. However, these products were not available on a regular basis, and the revolving fund helped to assure the poultry demonstration farm units of a continued supply of the balanced ration. In addition by buying ingredients and storing them savings were realized by taking advantage of seasonal fluctuations in prices. This operation served as a demonstration and training unit for poultry feed preparation at the University of Udaipur. Private firms are now manufacturing and selling balanced poultry rations in the Udaipur area.

3. Demonstration on the Use of Green Feed and Dried Leaf Meal and the Utilization of Waste Products From Poultry Houses.

1966-68, about 8,500 rupees. OSU Professor Paul C. Clayton

At the College of Agriculture poultry farm frequently a shortage of green feed or leaf meal for the flock often occurred, yet most of the resources were available to solve the problem. This project was used to "put it all together". Surrounding the poultry houses at the College several acres of very poor land were not used most of the year. By leveling this land, digging a well, installing irrigation channels and

with the liberal use of the poultry mnaure and old litter this land was brought into production and provided a year around supply of alfalfa or lucerne for the college poultry flocks. Frequently, extra green feed was also supplied to the College Dairy herd. This project demonstrated the value of poultry manure and litter for agricultural production and also demonstrated the value of green areas surrounding the poultry house in helping to reduce the temperature inside the houses during the hot dry season when temperatures are frequently in the 100° to 110° F range. This program has been continued by the University.

4. Demonstration of Modern Processing and Marketing of Poultry.

--1966-68, about 22,300 rupees. OSU Professor Paul C. Clayton

This project facilitated the development of a poultry processing laboratory at the College. Since most of the type of equipment needed was not being manufactured in India at that time, the equipment was designed by Dr. Clayton and others and it was constructed by local craftsmen. The University of Udaipur shared the financing of the project. The laboratory is used for teaching purposes as well as processing surplus poultry from the College farm. In most of India there is considerable variation in the supply and consumption of poultry products. This facility helps to provide a more uniform supply of poultry meat and, at the time it was started, it was the only source of ready-to-cook poultry in the Udaipur area, thus demonstrating ready to cook poultry.

5. Demonstration of Improved Methods of Raising Ducks and Producing Duck Eggs.

--1966-68, about 5,000 rupees. OSU Professor Paul C. Clayton

Funds for this project were used to start a small duck production program at the poultry farm on the Udaipur campus. Housing facilities and equipment were constructed and the program was started. The initial breeding stock of ducks available were local unimproved strains. Last year, however, arrangements were made to obtain some breeding stock from Haryana Agricultural University, where OSU had helped develop a duck production program with improved imported breeding stock. This project is a demonstration to the area around Udaipur for duck production.

6. Demonstration of the Development of Egg Producing Type Chickens for Rajasthan.

--1966-68, about 18,500 rupees. OSU Professor Paul C. Clayton

This project was started or the Bikaner campus in order to expand and improve poultry research on that campus. The project involved the assembling of breeding stock of the egg-type strains of layers available in India, testing these strains, and then pooling of genes of the best strains to develop a strain most suited for this area. This chicken breeding research program has continued for eight years, and has progressed very well in developing improved egg laying chickens. This project at Bikaner was the first of this type of poultry breeding program in India.

7. Demonstration of Modern Land Development and Research Techniques

--1966-67, about 206,800 rupees. OSU Professor Robert E. Yoder

When the University of Udaipur was started, it had very limited research facilities. Ultimately, however, the intention was that the University would take responsibility for all agricultural research in the State. OSU's Dr. Robert E. Yoder was assigned as a specialist and advisor in research organization and administration. The University started acquiring land for an experiment station at Vallabnager about 23 miles from Udaipur. Since resources were scarce for development of the experiment station and research, this project furnished enough extra funds to obtain equipment and to demonstrate precision land leveling, modern irrigation and drainage techniques, and partially mechanized research operation and management on the initial 100 acres of the land. Help was given to building and facility development and to the layout of 700 to 1000 acres of this "Vallabnager" experiment station. Now as a result of this project the administrators and faculty have improved their capability for research and the University has a well planned experiment station at Udaipur. The University is much better prepared now to assume responsibility for the agricultural research in the State.

8. Plant Protection Extension Education Demonstration

1966-67, about 24,300 rupees. OSU Professor Donald B. Robinson

This project demonstrated an intensive approach to farm problems by extension education. This included a complete package of improved practices, with emphasis on control of insects and diseases in corn production on 30 farms (all of the farms in one area). Faculty in the departments of Entomology and Plant Pathology and the extension wing of the University, along with local extension agents and the 30 farmers all cooperated in planning and carrying out the program. This illustrated cooperative action across departments in the University and a more effective method of extension education which has continued to be used in the extension program of the University.

9. Comparison of Costs in Operating Cook Stoves - Home Science

--1966-68, about 4,500 rupees. OSU Professor Fanchon Warfield

In order to help develop food laboratories in home science, various types of stoves were obtained and installed. This facilitated studies of costs of different fuels and systems for preparing food. These are in continuous use as part of the teaching and research work at Udaipur.

10. A comparative Study of Various Materials Available in India for Kitchen Work Surfaces - Home Science

--1966-68, about 8,000 rupees. OSU Professor Fanchon Warfield

This project helped to initiate research work on kitchens. Marble Chip, marble, ceramic tile and sumica were compared. This helped train faculty members in research and has been helpful in teaching and research programs.

11. Planning and Equipping a Laboratory for Institutional Management Training - Home Science

--1967-68, about 54,000 rupees. OSU Professor Fanchon Warfield

This project helped develop the facilities for food handling and preparation for the home science students' hostel (dormitory). This has provided a laboratory for training students in institutional management and it has become an example for other institutions. The development of plans and the study of the operation and management in this project was valuable training for both students and faculty.

12. Demonstration Farm and Home

--1969-72, about 53,600 rupees. OSU Professor Fanchon Warfield and Professor L. A. Best.

This was a project to develop a farm and a home that would demonstrate improved facilities and practices and which would be valuable in teaching research and extension programs. The land for this was set aside on Vallabnager experiment Station and a house was constructed. As of September 30, 1972, the farm and house was not yet in full use and the value of this project still depends on its future use and contribution to the teaching, research, and extension programs.

13. Mobile Extension Exhibit

--1968-71, about 96,500 rupees. OSU Professor L. A. Best

This project initiated an expansion and a more effective method of extension education by the University. Equipment for the educational exhibit was planned and designed by the OSU faculty member in cooperation with faculty of the University. Some of the equipment was purchased and part of it was constructed. It consisted of a Jeep, a two-wheel trailer, an enclosed 4-wheel trailer, exhibit panels with pictures, models and narrative, lighting, tape recorder, public address system, projector, record player, and supporting equipment. This mobile unit is used on the average at one location in the district each week. It is helping to provide an extension educational program even to many illiterate farm village people. In the year 1970-71, it reached at least 45,000 people.

14. Development and Operation of an Ambulatory Clinic for Livestock.

--1967-71, about 406,000 rupees. OSU Professor Ralph D. Barner.

This project provided the finances to develop a field training program

for veterinary students and an extension education and service program for the village farm people within a radius of 20 miles of Bikaner. The OSU veterinary professor and faculty from the College of Veterinary Science planned and designed the mobile equipment and organized the program. The equipment consists of two especially constructed enclosed vehicles that function well in the sandy terrain. They are mobile clinical laboratories with essential clinic furnishings of medical and laboratory instruments and equipment, drugs, biological products, surgical dressings, etc. Everything was furnished and constructed within India. The College continues to operate this mobile clinic about every day except Sundays and holidays during the academic year. Senior students and a faculty member go to a farm village community to treat livestock and demonstrate good animal husbandry practices. This has improved greatly the teaching, research and extension education of the university.

Mobile Ambulatory Clinic at Bikaner.

15. Poultry Production and Management Workshop.

--1967, 6,000 rupees. OSU Professor Ralph D. Barner and Professor Paul C. Clayton.

This project provided the financial support for the OSU Professors and the University of Udaipur Faculty at Bikaner to conduct a 4 day workshop for Veterinary and Animal Science Rajasthan State employees. Special speakers were brought in from other parts of India and special visual aids were prepared. This demonstrated post-graduate training services of the University for the State.

16. Animal Production and Management Workshop

--1968, 6,000 rupees. OSU Professor Ralph D. Barner

This project was to demonstrate post graduate training for general livestock similar to the one previously conducted for Poultry.

17. Workshop on Surgery

--1970, 30,000 rupees. OSU Professor Ralph D. Barner

This project was a more sophisticated seminar for Field Service Veterinarians,faculty and students and involved the entire College of Veterinary and Animal Science at Bikaner. It was valuable in bringing up to date the College and Veterinarians in this specialized field.

18. Workshop on Parasitology

--1970, about 46,000. OSU Professor Ralph D. Barner

This project in Parasitology was similar to the one on Surgery.

19. Leaf Analysis Project

--1968-69, about 7000 rupees. OSU Professors George R. Gist and Garth Cahoon.

The Ohio State University through its departments of Agronomy and Horticulture operates within the Ohio Cooperative Extension Service one of the outstanding plant analysis laboratories and Extension programs in the United States for purposes of determining fertilizer needs of soils and crops. The Agronomy and Soils departments at the University of Udaipur have for a number of years conducted a very limited plant anaylsis program utilizing laboratory techniques which are time consuming and of questionable accuracy. This leaf analysis rupee project combined with OSU/USAID dollar funds was designed to effect improvements in the program at the University of Udaipur through utilization of laboratory facilities and techniques available at The Ohio State University. Plant samples were collected,

dried, ground and prepared for analysis at the University of Udaipur: these samples were then mailed to The Ohio State University for analysis and the results of the OSU analyses were returned to Udaipur for use in research and extension programs at the Indian university. Dr. Garth Cahoon, Department of Horticulture, OSU, visited Udaipur on a short-term assignment to assist with the horticultural aspects of the leaf analysis program; Dr. George Gist, Department of Agronomy, OSU, and Chief of Party, assisted with the program as it related to agronomic crops.

As a result of this program approximately 10,000 plant samples originating from research projects, Extension demonstrations and private growers' fields located in the vicinity of Udaipur were analyzed through the OSU laboratory. Results of the OSU analyses were compared with sample analyses run in the soils and agronomy laboratories at the University of Udaipur. In general the results were reasonably consistent, thus the first impact was to support the Udaipur laboratories. The fairly large number of samples handled through the OSU laboratory also permitted the establishment of threshold values for certain elements in specific crops, thus adding greatly to the utility of future analyses performed at Udaipur. The overall effect of the project was also to improve the use of foliar analysis techniques in connection with research and demonstration projects involving horticultural and agronomic crops.

20. Mineral Nutrition of Crops

--1969-70, about 45,000 rupees. OSU Professor George R. Gist

The leaf analysis project described above led naturally into a more detailed look at the soil testing program being conducted by the Soils Department at the University of Udaipur. With a large number of plant tissue analyses available it became highly important that accompanying soil analyses be available as a means of diagnosis of nutritional problems with horticultural and agronomic crops. The soils testing laboratory at the University of Udaipur was inadequately staffed and was operating with largely antiquated equipment with resultant questionable analytical results. The mineral nutrition project was designed to upgrade the soil testing laboratory by the employment of additional more competent laboratory technicians (supplied by the University) and by updating and refurbishing of the laboratory facilities including the purchase of some needed laboratory instrumentation. All instruments purchased and all materials utilized in the refurbishing of this laboratory were of Indian manufacture, thus the question of spare parts and repair of inoperative equipment was much more readily handled than had been the case with laboratories furnished and equipped with instrumentation imported from the United States.

The result of this demonstration was a tenfold increase in the number of soil samples processed through the laboratory with a marked increase in accuracy. Prior to the refurbishing almost all of the samples processed through the laboratory were from various research projects being conducted within the Soils Department: the new laboratory permitted the handling of a large number of samples from Extension demonstrations and from individual cultivators' fields.

21. Soil and Water Conservation, Jobner

--1968-71, about 140,000 rupees. OSU Professor George R. Gist

The Jobner campus of the University of Udaipur is located in an area of low annual rainfall. The rainfall pattern is characterized by high intensity storms of short duration followed by months with no additional precipitation. During one three-day period in 1969 more than 10 inches of rainfall was recorded at Jobner. Many soils in the vicinity of Jobner are light textured and sandy, thus during the approximately 11 months without rainfall soil blowing and sand drifting pose serious conservation problems. In the Jobner area soil and water conservation are of extreme importance. Students at that campus needed a better opportunity to observe improved soil and water conservation practices and also needed facilities which would permit accurate measurements of soil movement under various conditions. In addition to the students at Jobner this campus was visited annually by a large number of cultivators living in the surrounding area. There was a great need for demonstrations which would be utilized in connection with cultivator meetings and field days.

The first phase of the soil and water conservation project at Jobner was the establishment of small-scale runoff plots with appropriate soil and water collection devices which permitted scientists and students to measure and study the quantitative and qualitative aspects of soil erosion under various cropping patterns. The runoff plots were established in such a manner that they could be planted to differing farm crops. Irrigation facilities were provided which would permit the application of known quantities of water at predetermined intensities, thus the student and/or researcher could accurately measure the amount of runoff and soil erosion from a given crop under rainfall of a predetermined intensity. This was the only such facility located within the State of Rajasthan and it provided a tremendous boost to the teaching and research programs in soil and water conservation.

The runoff measurement plots discussed in the previous paragraph occupied an area of approximately 30 x 100 meters. The second phase of the soil and water conservation project was designed to supplement the runoff plots through the establishment of field-scale soil and water conservation practices. An area of approximately 20 hectares was designated for this field conservation demonstration project. The area was slightly rolling and was ideally suited for the establishment of various types of field terraces, the construction of various kinds of water outlets and spillways, and the establishment of various windbreaks to aid in the control of wind erosion. Irrigation facilities were provided on a part of the field demonstration area while another section was to be handled as rain-fed. A small portion of the 20 hectare area was utilized for the production of grasses for livestock grazing, whereas the remainder of the area was utilized for the production of farm grain crops. The field laboratory was located in an area immediately adjacent to the soil and water runoff plots, thus students and visiting cultivators were offered an unsurpassed opportunity to observe soil and water conservation practices and programs in the field and then to relate these practices to specific results from accurately measured runoff experiments.

The overall result of this project has been greatly improved teaching at the Jobner campus and a meaningful laboratory for adult cultivator classes and field days.

22. Improvement of Dry Land Pastures, Bikaner

--1969-71, about 298,000 rupees. OSU Professor George R. Gist.

The Bikaner campus of the University of Udaipur is located in the largest man-made desert in the world. The Rajasthan desert, which currently covers hundreds of thousands of acres, is continuing to expand and to render additional areas unsuitable for normal agricultural operations. The land area now occupied by the Rajasthan desert was once covered by flourishing dry land grasses. These grasses have been destroyed largely through unrestricted grazing and the absolute lack of management systems. Work at the dry land research institute at Jodhpur has demonstrated that improved strains of dry land grasses can be introduced into the Rajasthan desert and that these grasses can be highly productive when they are afforded proper protection and management.

The dry land pasture improvement project at Bikaner was designed to demonstrate the feasibility of rejuvenation of pastures in the Rajasthan desert by the use of controlled grazing of improved grass species. In its initial phase the project involved the establishment of seed fields of several improved dry land range grasses with the intent of using seed and plant materials from these seed fields for the establishment of large areas of the improved grass species. The initial phases also involved fencing of fairly large areas of previous open range land and the establishment of livestock water facilities within each of the fenced grazing areas.

The project was initiated with considerable enthusiasm on the part of the faculty at the Bikaner campus. Early plantings were satisfactorily established and there appeared to be no serious problems developing as the demonstration progressed. Unfortunately the OSU/USAID program was terminated before there was opportunity for a valid assessment of the results of this extensive demonstration. There is, however, no questioning the technical feasibility of the project nor the need for such a project in the vicinity of Bikaner. It is possible that the Rajasthan canal, if and when it is completed, will provide water to large areas of the Rajasthan desert thus altering the general pattern of agriculture in this part of the state. However, even with the completion of the Rajasthan canal hundreds of thousands of acres will be outside the reaches of that irrigation system and will continue to need the type of revegetation and improved management which was intended to be demonstrated by this project.

23. Improvement of University Farm, Jobner

--1969-71, about 220,000 rupees. OSU Professor George R. Gist

In the Indian educational system only a very small percentage of students enrolled in colleges of agriculture have had practical experience

on farms. Therefore, many of the courses taught in the college of agriculture include laboratory sections which are known as "practicals". These "practicals" are conducted on the college farm. They involve practical farming operations including land preparation, planting, weeding, cultivation, harvesting, etc.

Facilities at the Jobner campus were inadequate to meet the needs of Jobner students for these "practicals". This project was designed to assist with improvements at the Jobner University farm including land leveling in preparation for irrigation and cultivation, installation of needed fencing, and the establishment of needed roadways and irrigation facilities. The project was jointly sponsored with the major financial contribution coming from the University of Udaipur and with supplemental support from the OSU/USAID program. The OSU/USAID program at the University of Udaipur was terminated prior to the time that a full evaluation of the impact of this project could be made. Preliminary observations indicate that the project was extremely useful and that the contribution of OSU faculty and funds provided as a result of the OSU program were extremely beneficial in this project designed to update the University farm and thus to improve student teaching on the Jobner campus.

24. Improvement of the Agricultural Engineering Teaching in Farm Power

--1969-71, about 125,000 rupees. OSU Professor Leland O. Drew

The OSU professor working jointly with Dean K. N. Nag and with Mr. L. P. Singh, of the College of Technology and Agricultural Engineering, revised the syllabus for the main course and they planned and executed the development of the Laboratory. Some dollar funds from the OSU/AID contract were used for purchasing from the U. S. three small single-cylinder test engines not available in India at that time. This project provided for the purchase of tractors, stationary engines, equipment and materials to establish a Farm Power laboratory for teaching and research equivalent to most such laboratories that can be found in the United States. The course in Farm Power was definitely upgraded, and the laboratory facilities are being used in the entire instructional program. This installation is expected to be used for many years. Engines and tractors selected for this laboratory were the various types being manufactured in India. When the students graduate they can feel confident that they have been exposed to engines, tractors, and test equipment used throughout India. Each student is expected to be thoroughly familiar with and know how to operate the four major kinds of tractors found in India.

25. Assessment of Utilization of Water Resources in Canal-Irrigated Areas OF Rajasthan

--1970-72, about 80,000 rupees. OSU Professor Leland O. Drew

This project was mainly to build a mobile laboratory for conducting field tests and measuring those parameters related to irrigation and drainage. By going into the irrigated areas of Rajasthan, collecting and tabulating these data and publishing the findings, better design of

irrigation and drainage systems will result, and precious irrigation water will not be wasted. Rajasthan has had an extensive irrigated area in the Chambal River region near Kotah in the southeastern part of the state. In many parts of the Chambal command area because of no drainage the ground water table has risen from below 30 ft. to only 2-3 ft. from the surface. Salts have risen to the surface, and crop yields are reduced drastically due to salinity. Similar problems will arise as the Mahi project and the huge Rajasthan Canal area are completed. Several trips were made to Kotah and to the Rajasthan Canal area. The University Agricultural Engineers were able to establish a relationship with personnel working in United Nations projects and the state Soil Conservation Service. A mobile van was constructed and was taken first to the Chambal area to conduct initial tests. Later the mobile van was taken again to the same area for more extensive tests. This experience certainly improved the stature with the public of agricultural engineering faculty of the University of Udaipur. It demonstrated to the people that the University could go out from the campus to render service to the farmers, and it initiated research activities.

26. Improvement of Meat Processing

-1970-72, about 120,000 Rupees. OSU Professor Leland O. Drew

This project facilitated the development of a meat processing laboratory and a course in this field of study. The OSU professor and faculty in agricultural engineering studied facilities in other parts of India and then designed and supervised the development of the laboratory. This is not only an excellent teaching facility, but it also is a pilot plant where improved techniques in meat processing is demonstrated to commercial meat handlers. The University is using the laboratory for conducting research in the processing and handling of meat.

27. Small Projects

--Less than 2,500 rupees. All OSU Professors in India

(a) Initiation of a Public Flower Show on the Campus at Udaipur. Now an annual event with 2000 entries and thousands in attendance.

(b) Improvement of Visual Aid facilities in main auditorium - Udaipur. About 10 percent of projection equipment and facilities were financed with this project, enough to initiate and proceed with it.

(c) Dry Land Pasture Symposium. -- Cooperated with FAO, Indian Central Government and University of Udaipur in conducting this symposium on dry land pastures for Rajasthan and adjacent dry land areas. OSU faculty participated and helped with proceedings.

(d) Lounge in Home Management House. -- This supported the work of OSU Home Economist in improving furnishings in the lounge area of the home management house for teaching senior students in Home Science.

(e) Improving College of Agricultural Engineering Library. -- This project facilitated the cataloging and indexing of scientific periodicals and arranging them so as to be readily available for student use in the agricultural engineering library.

(f) Completing back volumes of Scientific Periodicals in Library. -- This project resources along with other University resources were used to inventory especially needed scienti fic periodicals in the library, determining missing volumes and purchasing the volumes that were missing.

(g) 4-H Club Work development in Entomology.

(h) 4-H Club Work development in Poultry.

(i) Improving of Extension Administration and Office Management.

(j) Improvement in Methods of Extension Teaching.

(k) Extension education in soil fertility and fertilization.

(l) Demonstration of establishment of a grape vineyard.

(m) Demonstration of the Workshop Method of Extension training of Youth Club Leaders and members.

(n) Evaluation of the educational value of a Farmers Fair and Field Day.

(o) Demonstration of the automatic distribution of antibiotics and vitamins in water in poultry houses.

(p) Development of facilities to demonstrate post mortem techniques on poultry that prevent spread of infection.

(q) Development of a poultry disposal pit that would prevent spread of disease or contamination of air.

(r) A study of production of Japanese quails in the arid region of Rajasthan starting with imported hatching eggs from the U. S.

(s) Assisting with the Indian Convention of Agricultural Engineers at the University of Udaipur, 1970.

H. HISTORICAL EVENTS IN THE DEVELOPMENT OF THE UNIVERSITY OF UDAIPUR

1962 - Rajasthan Agricultural University established by Act of the State Legislature with three constituent colleges - May 9, 1962

Rajasthan College of Agriculture	- Udaipur
S. K. N. College of Agriculture	- Jobner
College of Veterinary & Animal Science	- Bikaner

G. B. K. Hooja, appointed 1st Vice Chancellor, July 5, 1962.

1963 - G. S. Mahajani appointed Vice Chancellor November 20, 1963.

University Act amended, modifying the model Agricultural Act to conform more with an act for traditional Indian Universities.

Name changed to University of Udaipur.

Maharama Bhupal College of Basic Sciences and Humanities at Udaipur became a constituent college.

Following institutions became associated/affiliated units of the University: 1. Rajasthan Mahila Vidhyalaya Home Science College; 2. Vidhya Bhawan Govindram Seksaira Teachers College; 3. Bhupal Nobles College; 4. Shramjeevi College; 5. Vidhya Bhawan Rural Institute; 6. Udaipur School of Social Work; 7. Meera Girls College.

1964 - College of Technology and Agricultural Engineering authorized; and first class enrolled in engineering curriculum.

First seminar for faculty trainees returned from the U. S. (participants) from Punjab Agricultural University (Ludhiana) and University of Udaipur held at Udaipur.

Land acquired (200 acres) at Beechwal for supplying fodder to livestock at Bikaner Campus.

Internal grading and semester calendar introduced in College of Agriculture and College of Veterinary and Animal Science.

B. K. Srivastava appointed first Director of Research on Nov. 7, 1964.

1965 - Responsibility for fundamental research in entomology, soil chemistry, and plant pathology transferred from State Government to University of Udaipur.

Land acquired near Vallabhnagar, 23 miles from Udaipur, for a major research farm; 1000 acres ultimate goal.

Acquisition of land near Udaipur site of a new main campus; 640 acres anticipated.

1966 - Lokmanya Teachers Training College, Dabok, associated with the University.

G. V. Bakore appointed first Dean of Post Graduate Studies.

Post Graduate Council organized.

D. K. Misra appointed first Director of Extension Education on July 16, 1966.

College of Home Science authorized as a unit of the College of Agriculture.

1966 - Prime Minister of India, Indira Gandhi, laid the cornerstone of the Center of Learning (Library Building), the first building of the new campus.

Two tubewells inaugurated at Beechwal Farm, Bikaner Campus.

1967 - Administration of the Colleges of Agriculture reorganized into one College with a Dean of Agriculture at Udaipur, N. Prasad, and an Associate Dean at the Jobner Campus, R. M. Singh.

Leela Phadnis appointed first Associate Dean of Home Science.

K. N. Nag appointed first Dean of College of Technology and Agricultural Engineering.

Seminars for faculty trainees, returned from the U. S. (participants) from University of Udaipur, one at Bikaner for those from Bikaner, and one at Udaipur for those from Udaipur and Jobner.

1968 - Dr. Roy M. Kottman, The Ohio State University, inaugurated electrical installation at Vallabhnagar Research Farm, January 12, 1968.

Formal dedication of Vallabhnagar Research Farm by the Indian Food and Agricultural Minister, January 20, 1968.

College of Technology and Agricultural Engineering moved to the New Campus. First classes held in the new building, July, 1968.

First field crop experiments established at the Vallabhnagar Research Farm.

First University Girls Hostel dedicated and occupied by students from Home Science and M. B. College.

1969 - Formal dedication of College of Technology and Agricultural Engineering building by John P. Lewis, Mission Director, USAID, India.

University administrative offices moved to the New Campus.

Seminar for faculty trainees, returned from the U. S. (participants), from the University of Udaipur held at Mt. Abu July 1-3.

Dr. Mervin G. Smith, The Ohio State University, dedicated the Veterinary Ambulatory Clinic at Bikaner December 10.

Home Science College moved to its new building in July.

1970 - Faculty of Home Science created with five new departments: Food and Nutrition; Child Development and Family Relations; Home Management; Clothing and Textiles; and Home Education.

Leonard J. Saccio, Director of the USAID Mission to India, reviewed programs related to university development, conferred with university administrators.

1971 - The University Library on the New Campus was inaugurated April 25 by the Chief Minister of Rajasthan, Mr. Mohanlal Sukhadia.

Ground breaking ceremonies occurred in May for construction of the Commerce and Arts College block on the New Campus.

Representation on the University's Academic Council was granted to the seven affiliated institutions of the Udaipur district.

University hosted an Inter-University Conference on Continuing Education.

University hosted All-India workshop on cucurbits and on maize.

Dryland agricultural research center was established at Vallabhnagar Research Farm under collaborative arrangements with Indian Council of Agricultural Research.

The University was selected by the Indian Council of Agricultural Research as a participant in the All-India buffalo milk scheme.

1972 - G. S. Mahajani, Vice Chancellor, resigned as of January 1, 1972.

Mr. S. P. Singh Bhandari was appointed Vice Chancellor for a six month period starting January 5, 1972.

Mr. Shau, registrar, became acting vice-chancellor in July.

The College of Home Science was separated from the College of Agriculture and became an autonomous college.

The Rajasthan State University Act/Statutes were revised by the State Legislature, but the revisions were minor and did not include major changes that had been recommended strongly for developing the University of Udaipur to serve as a Land-Grant type of University.

The Ohio State University AID/contract for the cooperative and collaborative program with the University of Udaipur was terminated September 30, 1972.

IV. UNIVERSITY OF UDAIPUR in 1972

A. ADMINISTRATION

The University of Udaipur is a State University established by ACT/ Statutes of the State of Rajasthan in 1962, and the Governor of the State of Rajasthan is the Chancellor. The actual administration of the University is vested in the following:

Vice Chancellor
Registrar
Comptroller
Estate Officer
Director of Research
Director of Extension Education
Deans of the Colleges
Heads and Associate Heads of Departments

Much depends on the able leadership of these administrators. The change in Vice-Chancellors in January, 1972, resulted in an extended period during which little progress was made and the University was still being served by an Acting Vice-Chancellor as of September 30, 1972, when this program was terminated.

The fiscal management of the University was improved recently. An Employees Service Manual was prepared which sets forth the policies, guidelines, procedures, and penalties for employment and performance. In addition, a Budgeting Manual was being prepared to define responsibilities and procedures for fiscal management and budgeting procedures.

The Colleges, Directorates, and Departments are administered by mature, experienced persons. Among these are some highly progressive and capable administrators. The capability of these administrators is reflected in the performance of their respective units. The delay of the University in appointing full Professors to head up the Departments of Agricultural Economics, Animal Husbandry (Udaipur), and Horticulture undoubtedly handicaps the full development of these areas. The lack of integration between Colleges and Departments is another restrictive factor.

The University administration is faced with a dilemma created by strong differences between some top administrators and, in some instances, between Heads of Departments/faculty and the College administrators. Resolution of this problem will be basic to the growth and development of the institution.

Although the Act/Statutes prescribe the appointment of well-qualified full-time persons to the posts of Librarian and Dean of Student Welfare, throughout the lifetime of the University these positions have been filled by appointing senior faculty members on a part-time, short-term rotational basis. This has prevented the development of sound, forward-looking programs for these two important elements of the University.

In respect to the functioning of the Authorities (official bodies) of the University, the cumbersome, time-consuming, and repetitious practices of the past are continuing. The large, complex, and unwieldly Board of Control, consisting of some 90 members from both inside and outside of the University, is unable to perform efficiently and effectively as the top policy-making body of the University.

In the last year, it appears that the internal statutory bodies are assuming more completely their assigned responsibilities. The Post Graduate Council became effectively active after a lapse of about two years. The position of Dean of Post Graduate Studies has been continued but this has been part time and the dean has been limited severely in being able to establish a strong coordinated program of graduate education. It is hoped that the circumvention of the academic council by the Executive Committee in respect to academic matters will be discontinued. A note of interest is that the existing Act/Statutes specify that the research program of the Director of Research is to be presented to the Academic Council for approval. There is no evidence that this procedure has been followed. Because of the composition of the Academic Council which includes representatives from Associated/Affiliated colleges, the adoption of this procedure would likely be unwise.

Considerable discussion has taken place in respect to establishing two academic bodies, one to deal with the agricultural and home science wing programs, the other to deal with the programs in the areas of basic science and humanities. The granting of permission for the various associated colleges to have representatives on the Council has diffused the agricultural influence, in that they are not an integrated part of the University and with their inclusion, agriculture service oriented aspects as well as research and extension have minority representation on the council.

B. COLLEGES AND DEPARTMENTS

Presently the University of Udaipur consists of three parts:

1. The Agricultural and Home Science Complex
2. The M. B. College of Basic Sciences and Humanities, and
3. Other Associated/Affiliated Colleges (Table 7)

The Agricultural and Home Science Complex consists of two colleges of agriculture, a college of Veterinary and Animal Sciences, a College of Technology and Agricultural Engineering, and a College of Home Science.

The Colleges of Agriculture are located at Udaipur and at Jobner. They are administered by a dean located at Udaipur and an Associate Dean located at Jobner. The departments have a chairman at one campus and an associate chairman at the other campus. There are eleven departments, namely: 1) Agronomy, 2) Horticulture, 3) Animal Science, 4) Dairy Science, 5) Agricultural Economics, 6) Agricultural Botany, 7) Agricultural Chemistry and Soil Science, 8) Agricultural Zoology and Entomology, 9) Plant Pathology, 10) Statistics, and 11) Extension Education.

The College of Veterinary and Animal Science is located at Bikaner and has nine departments as follows: 1) Anatomy, 2) Physiology and Pharmacology, 3) Animal Nutrition, 4) Bacteriology and Pathology, 5) Parasitology, 6) Gynecology and Obstetrics, 7) Medicine, 8) Surgery, and 9) Animal Breeding and Genetics.

The College of Technology and Agricultural Engineering is located at Udaipur, with some part at Jobner. It has five departments: (1) Farm Machinery and Power, (2) Soil and Water Conservation Engineering, (3) Civil Engineering and Agricultural Structures, (4) Mechanical and Electrical Engineering, and (5) Processing and Food Engineering.

The College of Home Science is located at Udaipur and has five departments: (1) Foods and Nutrition, (2) Child Development and Family Relations, (3) Home Management (4) Clothing and Textiles, and (5) Home Science Education.

The M. B. College of Basic Sciences and Humanities is an older traditional college which became a part of the University soon after it was formed. While it is a constituent part of the university along with the Colleges in the Agricultural and Home Science complex, it is quite different. Its comparatively large enrollment relative to the Agricultural complex, and the fact that it has retained its traditional characteristics, places the agricultural and home science complex in a relatively weak position insofar as broad University policies are concerned. The Agricultural and Home Science Complex with the help of the OSU/AID program has introduced the semester system, internal grading rather than external, and new systems of scheduling, examinations, and methods of instruction. In January, 1972 the academic council of the University appointed a committee to examine the feasibility of introducing the semester and internal grading systems at both the undergraduate and post graduate levels in the College of Basic Sciences and Humanities and in the associated colleges. This college is an essential part of the University and should serve and compliment the Agriculture and Home Science Complex. These problems need to be solved. It would be much better to keep this strong Basic Sciences and Humanities College than to separate it from the University and then to develop a new college to serve the entire University.

The seven Associated/Affiliated Colleges of the University in the Udaipur area have complicated further the attempted changes from the traditional to the newer type of University. In 1971, they were granted representation on the University's Academic Council, giving them more influence on policies of the University.

C. PHYSICAL PLANT

The University of Udaipur has three main locations in Rajasthan (1) Udaipur in the south (2) Bikaner in the Northwest, and (3) Jobner in the central part. Associated/Affiliated Colleges are located in the same area as Udaipur. Research stations in different parts of the state are beginning to be transferred to the University from the State.

Table 7. COLLEGES OF THE UNIVERSITY OF UDAIPUR

AND STUDENT ENROLLMENT -- 1971-72.

	ENROLLMENT		
	Under Graduate	Graduate	Total
I. CONSTITUENT COLLEGES			
A. AGRICULTURE AND HOME SCIENCE COMPLEX			
College of Agriculture (Udaipur)	391	149	540
College of Agriculture - S.K.N. (Jobner)	268	45	313
College of Veterinary & Animal Science (Bikaner)	129	24	153
College of Technology & Agr'l. Engr. (Udaipur)	139	--	139
College of Home Science (Udaipur)	84	--	84
TOTAL AGR'L. AND HOME SCIENCE COMPLEX	1011	218	1229
B. OTHER			
College of Basic Sciences & Humanities (M.B.) (Udaipur)	1675	788	2463
TOTAL CONSTITUENT COLLEGES			3692
II. ASSOCIATE/AFFILIATED COLLEGES - 7			
Vidhya Bhawan Govindram Seksaria Teachers College			
Bhupal Nobles College			
Shramyeeve College			
Vidhya Bhawan Rural Institute			
Udaipur School of Social Work			
Meera Girls College			
Lokmanya Teachers Training College (Dabok)			
TOTAL ASSOCIATED/AFFILIATED COLLEGES			3189
TOTAL UNIVERSITY ENROLLMENT			6881

At Udaipur a new main campus is being developed which presently has the top administration of the University, the Central Library, the College of Technology and Agricultural Engineering, and it will have a part of the College of Basic Sciences and Humanities and the College of Home Science. The College of Agriculture at Udaipur is located on the old campus, where the new buildings for Dairy Science and Horticulture are essentially complete, a new Farmers Training Building is under construction, and plans call for the addition to an existing building to provide much needed space for the Departments of Soils Science and Agronomy.

Additional space needs exist for many departments within the College of Agriculture and the College of Basic Sciences/Humanities both for faculty offices and for the teaching/research programs. A general rehabilitation of many of the present quarters would be beneficial.

A critical need of the University is an extensive study of space utilization to determine if the space now available could be distributed more equitably and if rather inexpensive remodeling of many of the existing buildings would satisfy the requirements. Until a sound long range up-to-date campus development plan is developed and related decisions reached, it would appear advisable to limit costly, permanent construction on the old campus. Some predict that within ten years it will be advisable for the entire Agricultural College to shift to a more suitable location because of pressure from the city of Udaipur for the agricultural farms.

The new campus development is hampered by lack of land, finances, and faculty/student housing facilities. The anticipated limitation in funds does not offer much encouragement for an early full development of the new campus.

The Rajasthan Polytechnic Institute and land, adjacent to the new campus, is expected to be transferred to the University. This transfer will help to alleviate the land shortage problem and provide an additional shop facility for the College of Technology and Agricultural Engineering.

Approximately 120 acres of farm land at the old campus are used by the College of Agriculture for instructional, research, and production purposes. The Departments of Agronomy, Animal Husbandry and Horticulture utilize this land. In addition, the College of Technology and Agricultural Engineering (CTAE) has obtained and improved approximately 20 acres for its instructional and demonstration programs at the new campus. The University places heavy stress on the income from these farms; there appears to be less concern by some with the effectiveness with which these farms are being used as practical training centers for students and for the short-term research of faculty members and post-graduate students.

The structures on the agricultural farms require modernization and improvement; for example, the Animal Husbandry facilities. The newly initiated All-India Coordinated Buffalo Scheme is resulting in some construction to house a portion of these animals.

At the Vallabhnagar Research Farm, 23 miles from Udaipur, in recent years, considerable funds have been utilized for buildings, including a

guest house and research offices and laboratories. These facilities appear to be adequate for the needs. Construction of hostels and other housing for the research staff has been requested.

The building and laboratory facilities generally at the Bikaner Campus presently are adequate for the program conducted on this campus, but improvement in these facilities are needed. The original buildings were part of a large Maharaja estate, and impose limitations on remodeling into modern university buildings. The so-called Beechwal farm of about 100 acres has been developed adjacent to the campus. The University has another farm of 2000 acres located 17 miles from Bikaner. These lands are sufficient for teaching, research and administration; however, an agronomist/soils scientist is needed to manage and develop the work on these farm lands.

The physical plant at the Jobner campus is also adequate but needs improvement. Some 200 acres adjacent to the campus are now used for teaching, research and demonstration. It is especially well planned for conducting research and demonstration on soil and water conservation and dry land farming.

On both the Bikaner and Jobner campuses housing is inadequate for both students and faculty. The low student enrollment on these campuses cast some doubt on the justification for an immediate large outlay of funds for capital improvement at these locations. There is need for development of a long range plan for buildings and laboratories for the entire university and the various campuses.

D. FINANCIAL RESOURCES

The State Government is the principal source of the operative funds for the University of Udaipur, providing about 64 percent of the total of about 25 million rupees. Various agencies of the Indian National Government provide about 24%; students provide about 8% of the resources in fees and other expenditures. About 2% comes from farm earnings, and 2% from U. S. PL 480 rupees.

The expenditures for capital improvements of the University has been mostly from State sources, and has amounted to about the same per year as the operating budget. Significant financial assistance for buildings came from the Central Government, from the Indian Council of Agricultural Research for the Agriculture and Home Science Complex, and from the University Grants Commission for the Basic Sciences and Humanities College.

In comparison with some other states,the State of Rajasthan was not able to provide the magnitude of financial assistance to the university as was provided the agricultural universities in other states such as Haryana and Punjab, because of lower level economic conditions. The costs are relatively high for the University of Udaipur in Rajasthan because the limited resources are being distributed to three widely-disposed campuses. Some of the other Indian Universities have much more land for farm production which provides additional financial resources. With more omplete integration of teaching, extension and research, and with good management, the University could be more efficient in the use of faculty and other resources.

There has been an increase in the state funds for research in the last two years mainly because two state research farms recently were transferred to the University. However, the funds provided for faculty research by the state is very low.

E. FACULTY

In 1971-72 the University of Udaipur had 475 faculty members (not including those in Associated/Affiliated Colleges), divided according to rank as follows: 23 professors, 79 readers, 284 lecturers, and 89 junior and other staff. These ranks correspond more or less with the usual U. S. university ranks of Professor, Associate Professor, Assistant Professor, and instructors/and assistants.

The number of faculty in the Agriculture and Home Science complex accounts for most of the increases since the establishment of the University in 1962, especially as the new colleges of Home Science and Technology and Agricultural Engineering were started.

The policy of the University to have only one professor in each department is being changed somewhat with the establishment of Senior Professors. However, the basic policy remains and the reader's positions are also greatly limited. The regidity in the departments prevents appropriate upward movement of many highly qualified young faculty members who may spend many years as lecturers.

The teaching faculty/student ratio is relatively low; approximately 1 to 6 for the Agricultural and Home Science conplex and 1 to 15 for the College of Basic Sciences and Humanities. With closer integration of teaching, research and extension the University could be more efficient with its faculty.

About 15 percent of the faculty have received advanced training in the United States under the OSU/AID program. About 37 of these received Ph.D. degrees. Most of the faculty has had graduate training and a large portion of the Professors and readers have the Ph.D. or equivalent degree. However, there are a number of areas where the faculty still needs to have advanced training, particularly in the newer colleges. Many of the faculty who received training 10 or more years ago need additional and refresher training.

F. ENROLLMENT AND TEACHING

In 1971-72 total enrollment in the University of Udaipur was 6,881, but nearly one-half of this was in the Associated/Affiliated colleges. (Table 7). The enrollment in the Agriculture and Home Economics complex was 1229, which was about 18% of the total University enrollment. The largest enrollment was in the College of Basic Sciences and Humanities, with 2463 or 36 percent. An appreciable number of foreign students are enrolled in the Agriculture and Home Science complex.

The Colleges of Agriculture and Veterinary and Animal Science offer graduate study and the College of Technology and Agricultural Engineering

is expecting to start graduate studies in some departments. The College of Home Science is expecting to start graduate study in Foods and Nutrition. The College of Basic Science and Humanities has a large traditional graduate program. The Ph.D. level study is offered in the Colleges of Agriculture in the departments of Agronomy, Agricultural Botany, Plant Pathology, Entomology, and Soil Science. The fulfillment of the Ph.D. requirement by thesis alone in agriculture has been discontinued.

Because of the lack of employment opportunities for graduates, the State Government has limited enrollment in Agriculture and in Technology and Agricultural Engineering in the last few years. The colleges are seeking ways of finding new employment opportunities for graduates. The College of Home Science has approached the State Government for approval to certify the graduates majoring in home science education for employment as teachers in Government Secondary Schools. The College of Technology and Agricultural Engineering has reported that a substantial and increasingly number of its graduates are being employed by private industry.

Relevance of the teaching to the needs of the student, the University, and the State is a matter of concern. Emphasis in the last year has been given to the necessity of revising curricula, course programs, and teaching methods. Some areas in the Agricultural and Home Science complex are striving to insure that their teaching has relevance to the existing needs. The University as a whole has not given much specific attention to the relevance of its academic programs. The development of a sound academic plan by each department should bring sharply into focus what the most urgent needs are and what a given department or discipline plans to do to satisfy them.

Questions have been raised about the degree and effectiveness with which the students in the Agricultural and Home Science complex are provided practical training, either in animal or plant science or in engineering. The clinic work in the Veterinary and Animal Science College, coupled with the ambulatory clinic program, should provide the students in this college with an excellent practical background. The College of Technology and Agricultural Engineering has acquired nearly 20 acres of land adjacent to the College which should provide an excellent facility for practical field training in use of agricultural equipment and water/soil engineering. This College also has a well equipped farm power laboratory and has essentially completed a meats processing laboratory. Both of these provide the facilities for excellent student training.

The Agricultural Instruction Farms are adequate for offering practical training in field crops, forage, horticulture, and to a limited degree, in livestock. The milk processing plant, although obsolete, could provide practical training for students in a number of pilot-sized food operations.

In certain instances, such as in Agricultural Engineering, a concerted effort has been made to provide the maximum of practical training. In the agricultural area, the emphasis seems to be that the farms be used principally for production and income rather than for the practical training of the students.

G. RESEARCH

The State Act/Statutes assign to the Director of Research responsibility for all of the research of the University as well as for administering the Agricultural Experiment Station. The Statutes do not give the Director of Research full faculty standing in some of the major committees and bodies of the University which has prevented him from exercising the desired authority in staff selections and policies affecting his area of responsibility.

The Statutes created a Research Advisory Committee to be presided over by the Vice-Chancellor with the Director serving as Convener and Secretary. Presumably, this committee is to serve by advising the Director on broad policy matters and to assist him in determining the objectives and goals for the total research program. Unfortunately, the Advisory Committee has been ineffectual for a variety of reasons: (a) the member composition is not truly appropriate for assisting the Director in an objective analysis of the on-going research program and in establishing research priorities based on the needs of the State and region; (b) the Committee is convened so infrequently that it cannot be conversant with the most urgent issues nor fulfill a significant advisory function, and (c) the deliberations of the Committee are concerned more with details rather than with broad research policies and directions. A restructuring of this committee, a redefiniation of its functions and responsibilities, and more frequent well-planned meetings would allow this Committee to be of unestimable value to the Director and to the University.

The Research Directorate is reported to have a total research staff of about 100, with 17 of these being senior specialists. Among the staff is a significant number of well-qualified and productive scientists. The small amount of integration of teaching and research results in ineffective use of the total qualified manpower of the University.

The Research Directorate has an active research program with emphasis on maize, sorghum, sesame, cucurbits, and grapes. Strong programs exist in entomology and plant protection which are under able leadership. Several All-India Coordinated Research Schemes have been awarded to the University by the Indian Council of Agricultural Research. During 1971-72 the University was included in The All-India Coordinated Buffalo Scheme which should provide for much-needed development of the livestock program.

Of interest is the fact that although Rajasthan is recognized as a major livestock State, the State Government and the University have given only minor attention to pertinent research and to the development of this resource. Perhaps this situation will change with the strong interest being evidenced by the Central Government in milk and dairy cattle programs.

During 1972, an Agricultural Implement Training Institute in Jaipur, the State Capital, administered by the Agricultural Engineering Board of the Agro-Industrial Cooperation, was awarded to the University. This consisted of a building plus a considerable quantity of farm machinery. The training and equipment testing/research functions became a part of the College of Technology and Agricultural Engineering at Udaipur. The farm machinery and laboratory equipment are being transferred to the

Udaipur Campus. Some personnel will also be included. This addition should provide a much-needed research, testing, and teaching adjunct for the College.

The shortage of land for research purposes has severely handicapped the University. The transfer of the State Farms as promised by the State Government will alleviate this problem. Some action in this connection has occurred. The Banswara Farm was transferred to the University during 1970-71 and is being utilized for research on pulses. During 1971-72, 50 acres of the Sumerpur Farm were transferred to the University which will be used for sesame research. The State Government retained the largest share of this farm for seed multiplication. The University received a modest increase in funds to cover the costs of developing and utilizing the Banswara and the Sumerpur Farms.

Because of the agro-climatic conditions of Rajasthan, the University has an excellent opportunity to give concentrated research efforts to dry land reclamation and dry land farming. To date, this has been given relatively minor attention. The current interest of the Central Government in arid land utilization may prove beneficial to the University. A close working relationship of the University with the Central Government's Arid Zone Research Institute at Jodhpur has merit.

The decision was reached in early 1972 to make Vallabhnagar Farm near Udaipur a State Sub-Regional Research Station. This will allow the Farm to align its research in accordance with the other State Regional Stations which the University anticipates when the transfer of the State research farms is completed. Some discussions have occurred in respect to establishing a University-administered Research Station in the Ganganagar area in the North, a section which has tremendous potential for crop production as the result of irrigation provided by the Rajasthan Canal.

Financial support from the State Government for the University's research program is grossly inadequate. Principal support is provided by the Central Government, supplemented by grants under the Pl 480 program and minor grants from other agencies. The desired expansion of research activities and the development o f urgently needed research programs is not possible under existing conditions. Adoption of complete integration by the University would permit it to utilize its limited resources more efficiently.

H. EXTENSION EDUCATION

The State Act/Statutes established the position of Director of Extension and assigned to him responsibility for the total extension education of the University. The Statutes also present a clear directive for integration of extension with teaching/research by defining the responsibilities of College Deans/Directors and the Department Heads. However, the College Deans/Directors and Department Heads have had little if any responsibility for the extension staff or programs. Much talent within the teaching and research branches is not utilized for those extension programs which require the best qualified and experienced faculty available.

The Statutes also provide for an Extension Advisory Committee. This committee appears to have had an insignificant function because it was not well constituted, did not meet frequently, and did not deal with major policies and directions of extension education. A well-functioning Extension Advisory Committee would have merit.

The Extension Education program of the University is impressive. It is problem oriented and many-faceted. It is designed to serve the technical needs of the cultivator, the home-making needs of the village women, and the career and aspiration needs of the youth. The program involves: (a) training programs for men and women, (b) national demonstrations on "packaged" farm practices, (c) farm advisory service, (d) communications, and (e) rural youth work.

The Extension Education Directorate appears to have good rapport with the Extension Service Section of the State Government and has been entrusted the responsibility of providing training for State Government Extension employees, including programs for the VLW's (village level workers). The Director administers the programs of two training centers; one at Udaipur and one at Bharatpur. A new Farmer's Training facility is being constructed on the Udaipur Campus. The University desires that all of the training centers and subject matter specialists now under State jurisdiction be placed under the administration of the Extension Directorate.

The Extension applied nutrition and the mobile nutrition training programs are especially oriented to the village women. The national demonstration program, supported by the Indian Council of Agricultural Research, has been pursued vigorously and the number of demonstrations held in some six districts has been in excess of that initially projected. The Farmer's Fair held in Udaipur in early 1972 was reported to be highly successful. The communications program of the Directorate has proved to be effective in dissemination of new information to the State Extension Workers and to the cultivators.

A noteworthy activity of the Directorate is the youth program. This has been well-received and the youth club number is continually increasing.

More than one year ago, the Director of Extension prepared a five-year plan for a step-wise expansion of the Extension Education program throughout the State. Some additional expansion in the area covered occurred during 1971-72, but the major extension activities are still, through necessity, concentrated in nearby districts. Adequate financial support coupled with a sound personnel and program development plan could make possible a Statewide extension education program within the next decade. Because of the vastness of the State, this would constitute a major accomplishment.

V. SUMMARY AND EVALUATION

A. ACCOMPLISHMENTS, 1964-1972.

Through the OSU/AID program from 1964-72, many accomplishments could be detailed. Some of these were a continuation and an expansion of those achievements during the preliminary program from 1955 to 1964. The major benefits of this program are summarized as follows:

1. The leadership in the University of Udaipur and the State as well as many faculty members through the OSU/AID program have become well acquainted with the essential principles and objectives of a service-oriented agricultural University with the integrated three functions of resident instruction, research and extension education. This may be very important in the development of the University in the future.

2. In cooperation with the administrators of the University of Udaipur, the State, and the Government of India, plans were developed for the organization and administration of Agriculture and Home Science teaching, Extension education, and research in the State of Rajasthan.

3. On the job training for faculty was provided and teaching and research were improved at all three campuses of the University of Udaipur, as 16 OSU faculty members worked with the University of Udaipur faculty from 1964 to 1972. (A total of 27 OSU professors since 1955).

4. OSU faculty demonstrated and helped develop new courses, new teaching methods, new equipment, 4-H club-type youth programs and new research and extension programs.

5. The OSU/AID program provided special advanced training in the U. S. from 1964 to 1972 for 62 University of Udaipur faculty members. These added to those trained from 1955-64 made a total of 113 individuals from Rajasthan trained since 1955.

6. Research plans were developed for the University of Udaipur, including the organization and administration. Research was initiated and improved in a number of subject matter areas oriented to solving the farm villagers' problems.

7. Library holdings were expanded and improved on the three campuses by inventorying critical needs and then selecting and purchasing additional volumes with dollars or rupees. A total of 3,854 books were purchased in the U. S. and shipped to India since 1955.

8. Laboratory equipment was increased and improved and supplies were provided on all three campuses. About 200 major items of equipment were purchased in the U. S. and shipped to India since 1964. This made a total of 1011 major items purchased in the U. S. and shipped from 1955 to 1972, besides thousands of small items and repair parts.

9. Poultry teaching, research and extension was developed at the University of Udaipur. Poultry facilities at the University were improved. Poultry production processing and marketing were introduced into the Udaipur area and now it has become a major agricultural business.

10. Home Science was started in the University of Udaipur. Improved facilities were obtained, curricula and courses were developed and adopted, research and extension education were initiated, and Home Science became an autonomous college of the University.

11. The Vallabhnagar research farm near the Udaipur campus was started, some land was reclaimed, and irrigation was developed. Buildings have been constructed and research and demonstrational work is being conducted. Recently it became a sub-regional research center for the state.

12. The Beechwal Farm of about 100 acres near the Bikaner campus has been developed with irrigation facilities, land improvement and fencing, so that it is being used for research, demonstration and production purposes.

13. About 200 acres of land at the Jobner campus has been developed for research, demonstration and teaching purposes. The land has been improved, access roads constructed, wells and irrigation facilities developed and special water run off research and demonstration plots are in operation.

14. The area of soil analysis and plant tissue testing were developed and improved. Research and educational programs were developed, soil testing and plant tissue analysis to determine fertilizer needs were demonstrated and initiated as a service to villagers. Extension educational programs were initiated in fertilization and improved crop production.

15. Extension Education by the University was initiated and expanded especially in the Udaipur area and to some extent in the areas surrounding Jobner and Bikaner. Exhibit demonstrations were developed, involving motor vehicles, equipment, special materials and other visual aids for use in educational programs for farmers and village people. Extension programs were initiated in Home Science and 4-H type Youth clubs were started.

16. An ambulatory clinic program was developed for the Bikaner area with the use of specially constructed auto trucks with laboratory and clinical equipment and materials. This serves for teaching of veterinary students, clinical treatment of animals and demonstrating to farm villagers the care of farm animals.

17. The College of Technology and Agricultural Engineering was planned, started and developed. Major and minor equipment, supplies and teaching materials were obtained or constructed and teaching, research and extension programs were initiated and demonstrated. A very good farm power equipment laboratory and a meat processing laboratory were developed for teaching and research.

18. Many major and minor workshops, seminars, and conferences were supported and assisted throughout the program, thus initiating and demonstrating continuing education programs. Some of these were in plant pathology, cucurbit research, poultry production and management, animal surgery, animal parasitology, and the annual conference of the All-India Society of Agricultural Engineers.

The accomplishments as listed above mostly were the result of the efforts of the long-term OSU faculty on the program and the training of Indian faculty both in the U. S. and India. It is more difficult to evaluate the contribution of short-term OSU professors or consultants. Their influence depended upon the response of the University to his/her analysis and recommendations. The reports of the OSU professors contained an appreciable quantity of sound recommendations based on careful analysis; recommendations which when acted upon favorably by the University, were highly beneficial. However, the consultant's reports in some cases have merely been reviewed by the University and the recommendations have not been acted on as yet. Some of the recommendations still are likely to influence administrators' decisions and the development of the University in the future.

The initial intent of providing the number of OSU professors requested by the University and the Indian Government was achieved to a moderate extent. All requests were not satisfied either in terms of the needs for a specific type of specialist or for an extension in time for those who served. Various factors contributed to the shortfall in the man months of OSU faculty requested by or allocated to the University of Udaipur by US/AID and GOI: (a) delays in obtaining approval of proformas (job description and qualifications of professors) (b) delays in obtaining and clearing suitable OSU professors and (c) delays between the time of approving a professor and his/her arrival at post. The unavailability of a multi-year plan adhered to by all parties concerned, setting forth the needs of specialists for at least two-three years, constituted a major handicap and made difficult, if not impossible, a prompt response by The Ohio State University.

The initially-stated purpose of the OSU/AID program to provide training for a substantial body of the staff of the University of Udaipur was fulfilled. Annually, almost the full quota of nominations by the University for training were approved and sent to U. S. for training; however, nominations ceased in 1970 pending further evaluation of the program.

The technical competency of the staff of the University has been increased substantially as the result of the OSU/AID Training Program and, as a whole, the faculty is as well-qualified as the staff of other Indian Agricultural Universities. Many of the administrators, including those at the department level, have had the benefit of foreign experience. Undoubtedly, the benefits of this training has greatly exceeded the cost. Even those few who have left the University for other positions are making important contributions to India.

The impact of the faculty training program on the development of the University has not been as great as it might have been. Several factors

prevented the University from obtaining the maximum benefits from the training. Foremost, the University often did not have a well developed plan or policy for selecting the faculty for training and for the most effective utilization and development upon their return. As a result, in some cases the selections were made on the basis of other less meaningful factors than on the merit of the person or the priority needs of the institution. One result has been the training of a number of faculty members in a given field, but very little or no training for the staff in some important, newly-developing areas. The slowness of the University to integrate its programs in teaching, research, and extension education also was a major deterrent to achieving optimum utilization of the talents of the faculty after they returned from the training in the U. S.

In large measure, the University has an adequate mass of well-trained administrators/faculty, but there are some areas where additional foreign training would be most helpful. Many of the faculty should have post graduate training and refresher training. Strong administrative leadership, a revised administration organization, and more flexible and realistic promotion/salary policies would permit the University to capitalize more fully on its human resources and further improve its faculty.

B. EVALUATION AND RECOMMENDATIONS FOR THE UNIVERSITY OF UDAIPUR

Late in 1970, The Ohio State University's chief of party took leadership in conducting an analysis of the program at the University of Udaipur to determine the extent with which the University had developed during the OSU/AID program period. The results of the analysis and the related recommendations were contained in a document "Barriers to the Development of the University of Udaipur with Recommendations Pertaining to the Assistance of USAID and The Ohio State University", December 20, 1970.

When considering that the University was just started in 1962, by combination of three small colleges, and then examining the status of the University in 1972, we find that considerable development has taken place. However, it seemed when the 1970 analysis was made that the University was making very slow progress. Therefore, it was recommended then that the University and the State take action positively and promptly to deal with critical problems in the development of the University, and that further inputs from the OSU/AID program should depend on these actions taken. Meanwhile other developments in the relationship between the U. S. and India led to the phasing out of the program in 1972.

Within the last two years, the criteria deemed essential for evaluating the level of development of an Indian Agricultural University became more clearly delineated and identified. These emerged logically out of the previous years of experience and were also the natural consequence of efforts to compare the relative stage of development of the different agricultural universities in India. These criteria/conditions recommended by USAID/Delhi, when combined with the criteria set forth by The Ohio State University for the University of Udaipur in 1970, constituted the final objectives for the program. Consequently, these objectives provide the basis for the final evaluation and recommendations for the future.

The following statements cover each of the criteria and conditions which were considered to be important:

1. State Act/Statutes

Throughout the OSU/AID program period, the University of Udaipur has been handicapped by certain gross deficiencies in the Rajasthan State Act/Statutes. Therefore, much effort was exerted by The Ohio State University to have the Act/Statutes suitably revised. The Act/Statutes were revised during 1972, but the revision did not incorporate the major changes recommended by The Ohio State University representatives and thought to be important to the proper development of the University of Udaipur. Consequently, the revised Act/Statutes represent little improvement over the previous document. It is important to point out, however, that the Act/Statutes which prevailed during the past ten years did provide the University with sufficient latitude so that it could satisfy many of the criteria for agricultural university development.

2. State Financial Support

The financial support of the University by the State Government has increased appreciably over the year but the funds have not been fully adequate to provide for the desired development and improvement of the physical plant, nor to permit the needed expansion of existing programs and the undertaking of important new ones. State funds for college and individual research projects are essentially lacking, and the expansion of extension education throughout the State has not been possible within the limited budget. The State-imposed maintenance of three separate campuses (Bikaner, Jobner, and Udaipur) is costly and probably is not justified on the basis of student population.

More efficient utilization of the financial resources is possible by improved fiscal management, sound long-range Capital improvement and Academic Plans, much more integration of teaching, research, and extension education, and elimination of duplication through consolidation of campuses, curricula, and courses.

3. Long Range Plans

For several years, The Ohio State University Chiefs of Party have emphasized the need for the University of Udaipur to develop sound long-range plans; one for campus development, and the second for academic programs. The recommendation was made that the inadequate, out-dated Campus Development Plan be revised so as to maximize the use of available funds and better provide for future needs, but so far this has not been done.

The University of Udaipur needs to develop an academic (program) plan which would reveal the weaknesses and strengths of the institution and permit more precise judgments on assistance needs by external agencies/ institutions. At the termination of the OSU/AID program this had been started and the foundation had been laid upon which the University could structure its long-range academic plan.

4. Physical Plant

Overall, the physical plant of the University may be rated as "adequate" for its current programs. There are areas, however, which are excessively crowded and where physical renovations are needed. Proper allocation of the available space, with judicious remodeling of the related facilities, would appear to be preferred to an extensive building program, at least until decisions for capital improvements can be based on a sound campus development plan. The building program currently underway, and as envisioned, will be greatly handicapped by limited funds. Within recent years, there is considerable question that the funds made available for construction and land improvement have been utilized most efficiently.

5. Transfer to University by State of Research and Extension Education.

The lack of full state support for the University is reflected in the slowness of the State to transfer the State-operated research farms and extension training centers to the University. The transfer of the research farms has been urged throughout the life of the University. Within the past two years, one small research farm and a portion of another farm were transferred, but the other three important farms still remain under State jurisdiction.

Reportedly, the State Government has been reluctant to transfer these farms until it is assured that the University is capable of absorbing them effectively. Although the Ohio State University professors have advised the University to develop and submit detailed plans for utilizing these farms if they were transferred, very little planning has been done. During the last year, the State Government signified its willingness to transfer the remainder of the farms immediately when the University achieved an acceptable level of integration of teaching, research, and extension education.

6. Land for Teaching and Research

In Udaipur, the University is sorely lacking in land for both teaching and research purposes. It has only about 130 acres essentially contiguous to the Udaipur Campus and about 150 acres of improved land at its Vallabhnagar Experiment Station Research Farm some twenty-three miles away. The development of the new campus at Udaipur, as projected, will be limited by the condition and quantity of the land at the selected site.

7. Integration - Teaching, Research, Extension Education

The integration of teaching, research, and extension education, a basic concept of the United States Land Grant Universities, is accepted as a major criteria for Indian Agricultural University development. The State Act/Statutes governing the University of Udaipur clearly indicates that the integration is to take place. However, it has just been started. Hopefully the experience gained to date will lead to a complete integration when the State transfers the remaining research farms and extension training centers. Problems of organization of faculty and the integration still exist in the University.

8. Semester Scheduling and Internal Grading - Basic Sciences and Humanities

Within the teaching sphere, the College of Basic Sciences/Humanities has retained its traditional educational pattern and practices, whereas the colleges within the Agricultural and Home Science Wing have adopted semester scheduling and the internal grading and evaluation system. The disparity between these two wings of the University has prevented the full and efficient use of the available physical, financial, and human resources. Students in Agriculture, Home Science and Technology and Agricultural Engineering should obtain basic sciences and humanities in the College of Basic Sciences and Humanities; however at present the Agriculture and Home Science Wing provides most of the basic sciences and humanities courses within their complex. The Basic Sciences and Humanities College is an important part of the Land Grant type of University and should be developed and improved as a complementary part of the Agriculture and Home Science complex.

In general, the semester-type of scheduling and the internal grading system are well accepted by the administrators and the teaching faculty of the Agricultural Wing. There is some indication these will be adopted by the College of Basic Sciences and Humanities in the near future.

9. Service Orientation

As an institution patterned after the Land Grant System, the University of Udaipur is presumed to be service-oriented, i.e. to have programs on teaching, research, and extension education which are sensitive and responsive to the needs of the student, and the people of the State, region and nation. Although these functions are within the University, there are apparent weaknesses in executing the service-oriented principle. Some units within the Agricultural and Home Science Wing are earnestly striving to make their programs relevant to the existing and anticipated needs. Certain curricula have been revised recently and more attention is being given to improved teaching. In some areas, noteworthy practical training of the students is being conducted concurrently with the classroom theory. The research and extension programs are generally devoted to the agricultural needs of the State/Nation.

The University has never clearly enunciated a policy emphasizing the service aspects -- or stressing the desirability to have all programs in teaching, research, and extension education relevant to existing and projected needs. This lack of firm direction has handicapped the institution.

10. Administration

Whether an Indian Agricultural University progresses to the extent of complying with the accepted criteria for development is dependent considerably upon the administration, particularly the Vice-Chancellor. The Vice-Chancellor and other administrators of the University of Udaipur throughout the term of the project had difficulty in changing the University from its English traditional educational system to the new type of

agricultural university oriented to serve the people of the state. Consequently, the University has not progressed as rapidly as might be expected toward becoming an agricultural university that served the entire State of Rajasthan.

Within the Agricultural and Home Science Wing, the College Deans, Directors of Research and Extension Education, and the Department Heads are largely mature administrators who are basically convinced of the merits of the Land-Grant System. This program has exposed them and provided training in the principles of a service-oriented University. In the latter years of the project, strong and uncurbed conflicts between key administrators of the University created University-wide disharmony and prevented as much cooperation as needed between the different major functional units of the institution.

As previously noted, the existing State Act/Statutes provided the University with the needed authority to develop a strong University. For various reasons the administration was not able to comply with many of the requirements and intent of the Act/Statutes and thus the University developed very slowly.

At the beginning of 1972, the Vice-Chancellor resigned and an interim arrangement prevailed throughout the remainder of the project period. A successor had not been appointed by the end of the project period. Certainly in the future, much will depend on the Administration and leadership provided the University.

11. Faculty Improvement

A dynamic faculty improvement program needs to be planned, organized and initiated. Much has been done through this OSU/AID program, but both in-service training and advanced degree training must be continued in order to maintain and improve further the quality of faculty.

12. Development of Subject Matter Areas

Some subject matter areas have developed and progressed quite well, while others have lagged behind. A dynamic improvement program is needed especially in some newer and weaker areas and a continuing dynamic program is needed for those areas which have had most development. Development of certain subject matter areas in the University and the State will be critical to the future of Rajasthan among which are the following: soils, water, arid farming, animal science, veterinary science, resource use and development, crop sciences, agricultural engineering, plant protection, plant pathology, entomology, home science, community development, farm economics, marketing, and food processing and preservation.

13. National and International Collaboration and Exchange

The University of Udaipur has benefitted many ways by the OSU/AID program, and these benefits will be long lasting especially if the University can overcome the problems existing presently in making rapid progress.

A strong linkage was developed between The Ohio State University and the University of Udaipur over the last 17 years. Both universities would benefit in the future by some form of close working relationships and exchanges. To help insure future progress in development the University of Udaipur should continue to have collaborative and exchange programs with other agricultural institutions in India and with foreign institutions.

C. SUMMARY

The Ohio State University has provided substantial assistance to the State of Rajasthan in the development of the University of Udaipur in accordance with the purposes of the OSU/AID program and much has been accomplished. Advice and counsel has been given on policies, plans and programs of the University, as well as on organization, administration and operation. Specific assistance has been given, varying in extent, to resident instruction, extension and research as well as to improvement of faculty, facilities and equipment in at least 15 subject matter areas.

At the termination of the program Sept. 30, 1972, the University still had many inadequacies with respect to meeting the specific criteria/conditions for Agricultural University Development; the recently revised Act/Statutes had not corrected major weaknesses in the original Act/Statutes, long-range campus and/or academic plans had not been developed, integration of teaching, research and extension was only started, and financial support from the public sector was inadequate. Only a few of the State research farms and the extension training centers had been transferred to the University, and some of the changes in the internal organization of the University had not been completed. Efforts exerted to make the curricula/teaching relevant to the needs of the student has been successful in some areas, and a significant proportion of the research and extension education programs were related to the agricultural needs of the State.

To a major extent, the University has an adequate number of well-qualified staff, although some areas need strengthening, and a continuing faculty improvement program will be necessary in the future. Certain areas of the University are superior due to strong administration at the College and/or Department levels. The College of Technology and Agricultural Engineering and the Departments of Agronomy and Entomology at Udaipur are examples. The College of Home Science, although young, understaffed and under-financed, shows promise. The OSU professors made a substantial and lasting contribution to the University within their spheres of specialities; the OSU/AID faculty training and program in the United States has provided the University with a core of well-prepared teachers and scientists. Inadequate University policies and practices limited the utilization and professional growth of some of the faculty after they returned from training in the United States.

For various reasons the University Administration has been slow to make important changes and to establish some firm policies that would promote the rapid development of certain aspects of the University. During

the last nine months of the OSU/AID program, the University was unable to give consideration to its development needs due to the resignation of the Vice-Chancellor in January, 1972, and the temporary administration arrangement that prevailed thereafter.

The extent with which the University will persevere in attempting to develop into a strong institution along the Land Grant pattern cannot be predicted. Traditional influences remain great, especially in the College of Basic Sciences and Humanities, and personality differences among several top administrators are acute. The future development pathway of the University will be determined considerably by the beliefs, policies, and decisions of the new Vice-Chancellor and by the support given to him by the State Government.

A strong foundation has been laid through the OSU/AID program which makes it possible to develop a strong State University in the State of Rajasthan that would have the three functions of resident instruction, research and extension education oriented to serve the people of the state in agriculture, home science and related areas.